RATE DEVELOPMENT METHODOLOGY

JANUARY 2007

TABLE OF CONTENTS

1. OVERVIEW OF DTS COST RECOVERY FUNCTION
    - 1.1 Rationale for the Chargeback Business Model
    - 1.2 Rate Setting Policies
    - 1.3 Need to Change Rates
    - 1.4 Summary of Paper

2. GENERAL RATE SETTING AND MAINTENANCE
    - 2.1 Fundamental Rate Equation
    - 2.2 Variability of Process
    - 2.3 Overview of Methodologies
    - 2.4 Overarching Concepts
        - 2.4.1 Defining the Billable Unit
        - 2.4.2 Estimating Cost of Service
        - 2.4.3 Estimating Volume of Billable Units
    - 2.5 Methodologies
        - 2.5.1 Historical/Trend Forecast
        - 2.5.2 Billable Unit
        - 2.5.3 Service
    - 2.6 Rate Monitoring Process

3. TEMPORARY SUBSIDIZATION OF SERVICES
    - 3.1 Business Need for Temporary Subsidization
    - 3.2 Methodology
        - 3.2.1 Summary of Methodology
        - 3.2.2 Defining the Policy Objective (Step A)
        - 3.2.3 Defining the Cost Recovery Objective (Step B)
        - 3.2.4 Defining the Billable Unit
        - 3.2.5 Estimating the Cost of Service
        - 3.2.6 Estimating the Volume of Billable Units
        - 3.2.7 Setting the Rate
        - 3.2.8 Estimating Total Subsidization and Financial Risk
    - 3.3 Monitoring and Control
    - 3.4 Impact on Restricted Fund Sources

4. GOVERNANCE
    - 4.1 Content of DTS Rate Proposals
        - 4.1.1 General Rate Proposals
        - 4.1.2 Proposals for Temporary Subsidization
    - 4.2 Review and Approval Process

APPENDIX A - FACTORS AFFECTING COMPLEXITY AND METHODOLOGY FOR EACH TASK

APPENDIX B - COST ALLOCATION BUSINESS RULES

APPENDIX C - SUMMARY OF CHANGES

DTS RATE DEVELOPMENT METHODOLOGY

1. OVERVIEW OF DTS COST RECOVERY FUNCTION

As a department that provides centralized services for other government entities, but does not receive a budget appropriation from their respective fund sources, the Department of Technology Services (DTS) must recover from its customers the cost of providing services by charging service rates and depositing that revenue in the DTS Revolving Fund which funds all DTS operations. As discussed below, the use of a chargeback model has many benefits and is used by the DTS and its customers in several different ways, including monitoring performance and making business decisions. The cost recovery function is made up of three primary tasks: Cost Accounting, Rate Setting and Billing. Cost Accounting is a fairly regimented process that is executed according to business rules and is designed to provide an objective estimate of the total cost of providing services. Billing is the process of creating invoices and collecting payments from customers. In contrast to the other two tasks, Rate Setting often requires a difficult balance of objective cost analysis with the more subjective disciplines of marketing and forecasting customer demand. Because DTS service rates represent the cost of business to DTS customers and the sole source of funding for the DTS, they are a critical component of DTS Financial Management and the methodology for how rates are set should be well delineated so that stakeholders will have a clear understanding of how they are determined.

1.1 RATIONALE FOR THE CHARGEBACK BUSINESS MODEL

There are many benefits to the chargeback business model upon which the DTS Financial Management practices are based. The following represent the primary reasons for implementing a chargeback business model for the DTS:

- Provide for an adequate level of financial resources to support the provision of centralized information technology services.
- Encourage customers to utilize DTS services efficiently by enabling them to determine, in a timely manner, the volume and cost of each specific service they utilize and, thereby, modify their use of those services.
- Establish cost recovery methods that are consistent with the requirements of state control agencies and the federal government, and which will facilitate predictable levels of funding for the future acquisition of centralized information technology services.
- Provide customers the opportunity to compare DTS billing rates with other providers of similar services by having a standard means to report utilization and costs.
- Provide the DTS with information to make formal valuations of IT services and plan for investment based on cost recovery and business benefits.
- Recover IT costs in a fair, consistent, and repeatable manner.
- Influence customer behavior to promote the effective and efficient use of information technology.

1.2 RATE SETTING POLICIES

Given that the process for setting rates is not entirely formulaic and that they are a fundamental link between DTS and its customers, there is constant pressure from stakeholders regarding rates based on each stakeholder's respective expectations. Many of the expectations listed below are mutually exclusive and efforts to meet an expectation in one area may cause the DTS to fall short of expectations in another area.

Customers:

- All Customers want as much service as they can get for the lowest price they can get.
- Some customers want additional services bundled into existing rates.
- Customers do not want to pay for services they do not require.
- Customers expect that our financial management practices will not create problems regarding their ability to claim reimbursement from the federal government.
- Customers expect that the DTS can discuss the components that make up the rates they are charged.

Taxpayers: Citizens expect that their tax dollars are spent as efficiently as possible.

Internal Customers: Costs and revenues are key measurements of business performance and service managers expect the principles used to establish these measures to be sound.

Financial Oversight: The Department of Finance and the Legislature operate under the assumption that the rates charged for services are tied closely to the costs to deliver them.

Federal Government: The federal government expects that the DTS will not charge federally funded programs for costs that they indicate are not allowable or through methodologies that are not reasonable and consistent.

In order to establish and maintain the integrity of the cost recovery function, the DTS proposed and the Technology Services Board approved a set of Guiding Principles for Cost Allocation and Rate Setting. The approved document is attached as Appendix A. The principles that were adopted for rate setting are as follows:

DTS Guiding Principles for Rate Setting
1. The Department strives to have reasonable rates for comparable services.
2. The Department's rates must be justifiable and supportable.
3. The Department's internal systems should provide accurate and timely cost and activity data for rate setting and billing purposes.
4. Services will be periodically reviewed to determine the most appropriate rate-setting methodology according to the type of service (that is, measured usage, subscription, direct bill).
5. The revenues generated from the rates should fully recover the costs of the service, plus allowable reserves for working capital and equipment replacement. In order to facilitate the adoption of new services and/or the transition of customers to more efficient technologies, this principle may be suspended for a specific service for an actively managed period of transition. This exception will only be made for a documented policy objective and for a defined time period, after which the service is required to be compliant with the principle.
6. The effort required for rate setting should be commensurate with the benefits derived.
7. The rate setting process should provide mechanisms for ongoing rate review from a financial, technical, and business perspective.

1.3 NEED TO CHANGE RATES

There are two types of DTS rate proposals: adjustment to existing rates and the establishment of new rates. When an existing rate is adjusted, the change is typically referred to as 'rate maintenance' and is caused by either a change in the cost or the level of utilization of the service. For most DTS services increased utilization creates a downward pressure on rates. Historically, the utilization of DTS services has grown over time, so there has been a constant downward trend in service rates over time. For most services, rate maintenance relies heavily on historical information from which reasonable forecasts of future cost and utilization can be derived. As a result rate maintenance is typically a straight-forward process that results in low-risk incremental rate changes.

The establishment of new rates can be due to the introduction of a new service or a significant change in an existing service. These adjustments often require significant analytical resources and a heavy reliance on a projected business environment because there may be no historical data from which to project costs or utilization or that information is no longer relevant due to changes in the service model.

1.4 SUMMARY OF PAPER

The primary focus of this paper is to communicate the methodologies used to determine services rates and document the processes by which the rates are reviewed and approved by stakeholders. This paper will cover the general practices that are followed for rate setting when the goal is to set the rate according to the expected cost of the service (CHAPTER 2: General Rate Setting and Maintenance), as well as the process by which rates are set in situations that require the rates be disconnected temporarily from their underlying costs (CHAPTER 3: Temporary Subsidization of Services). In addition to the discussion of methodologies this paper will also define what information the DTS will pull out of these methodologies to present to stakeholders as rate change

proposals and outline the process by which rate proposals will be reviewed and approved as required in statute (CHAPTER 4: Governance).

2. GENERAL RATE SETTING AND MAINTENANCE

This section discusses the various methods used to establish a rate for a service. Many of the issues and methods discussed here are also applicable to the discussion of Temporary Subsidization of Services (CHAPTER 3).

2.1 FUNDAMENTAL RATE EQUATION

Given the rate setting policy of aligning rates with the cost of providing service, the equation for determining rates can be summarized conceptually as follows:

$$\textbf{RATE per Billable Unit} = \frac{\textbf{Cost of Service}}{\textbf{Volume of Billable Units}}$$

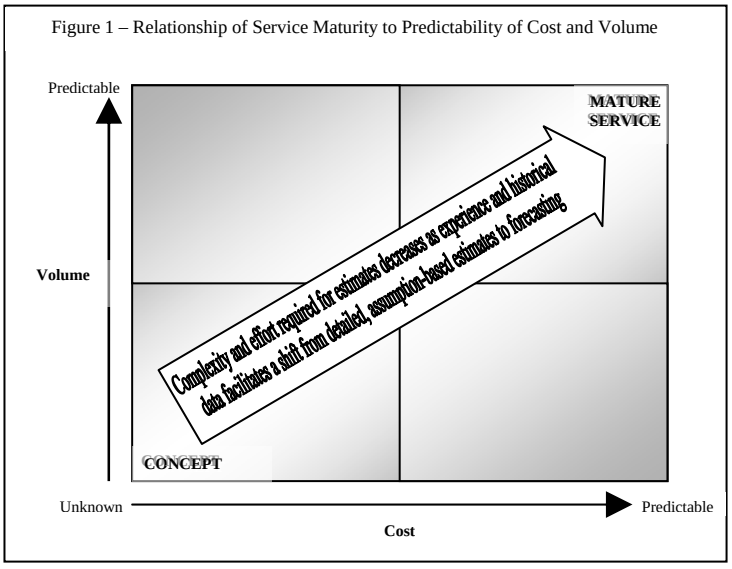
This equation is the fundamental framework upon which all DTS rate setting methodologies are based. Although there are three different rate methodologies employed by the DTS and the unique characteristics of each service will usually require some level of customization to the analytical process, every step in the process can be attributed to one of the following three actions required to execute the equation:

- Define the Billable Unit
- Estimate the Cost of Service
- Estimate the Volume of Billable Units

2.2 VARIABILITY OF PROCESS

Although the rate equation is very straight forward conceptually, the actual progression of steps to accomplish these three actions varies greatly from rate to rate. One of the primary factors that affect the magnitude and complexity of the rate setting exercise for a particular service is the service maturity. As illustrated in Figure 1, the ability to predict volume and cost typically increases as the service matures. As a result, the cost and volume variables of the rate equation can often be forecasted from historical data for a mature service. On the other hand, new services, for which there is little or no first hand cost experience, requires that costs be identified and projected at a very granular level and volume estimated primarily on market research and assumptions about the marketability of the service.

Figure 1 – Relationship of Service Maturity to Predictability of Cost and Volume



In addition to the maturity of the service, there are many other factors that affect the number, order, and complexity of tasks involved in completing the rate calculation. These factors are listed and explained in Appendix A. Many of these factors can not be modeled in a standardized quantitative analysis tool because they involve business policy and/or reasonable effort decisions that affect the granularity of information required and will vary by service. Thus, the rates analyst must balance common sense and analytical process for each rate development effort to meet the business objectives of the DTS in a reasonably efficient manner within the Guiding Principles.

2.3 OVERVIEW OF METHODOLOGIES

The vast majority of the analytical processes employed to set rates can be grouped into three methodologies: Historical/Trend Forecast, Billable Unit, and Service. Each methodology defines the variables of the fundamental rate equation in different ways based on the characteristics of the service and the quality and availability of historical information. It is essential that the analyst setting a rate is afforded the flexibility to apply common sense to the unique business characteristics of each service and to modify these methodologies to most efficiently establish the rates. The table below provides a summary of the methodology, a brief description of the analytical approach, and an illustration of how the methodology relates to the fundamental rate equation.

Overview of Rate Setting Methodologies

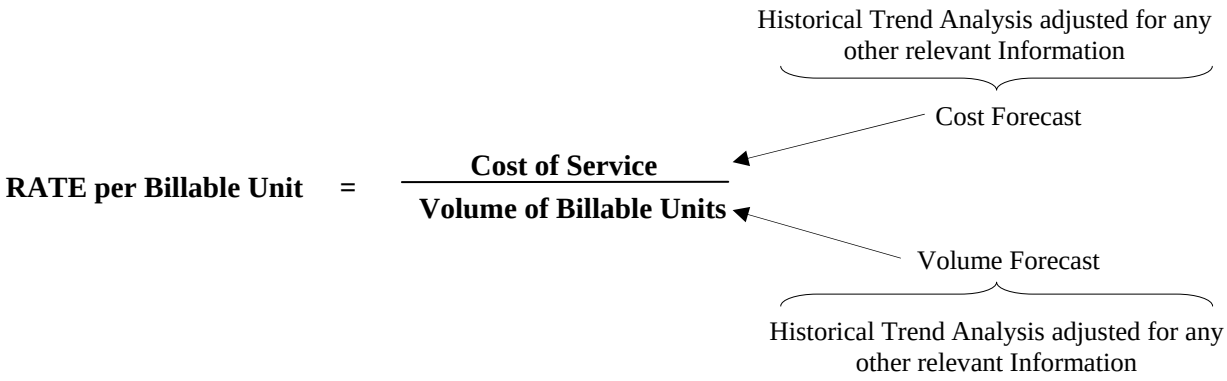
Historical/Trend Forecast

Summary of Methodology: Forecast cost and volume primarily based on historical trends and any other relevant information that may be available but not reflected in historical data.

Description of Approach: This approach relies heavily on the availability and relevance of historical information. When the utilization and costs of a service are reasonably predictable, this methodology can be used very efficiently to perform rate maintenance. Often a simple comparison of historical costs and revenue allow the rate analyst to determine the rate adjustment necessary. For example, if prior year revenue for the service exceeded costs by 10%, then a rate reduction can be easily calculated to align revenue with costs. This methodology is most appropriate for the mature services.

When potential variance in utilization, costs, or revenue are seen as significant enough to create a material impact on the accuracy of the rate, additional analysis is necessary to incorporate additional information into the forecast.

Relationship to the Fundamental Rate Equation:

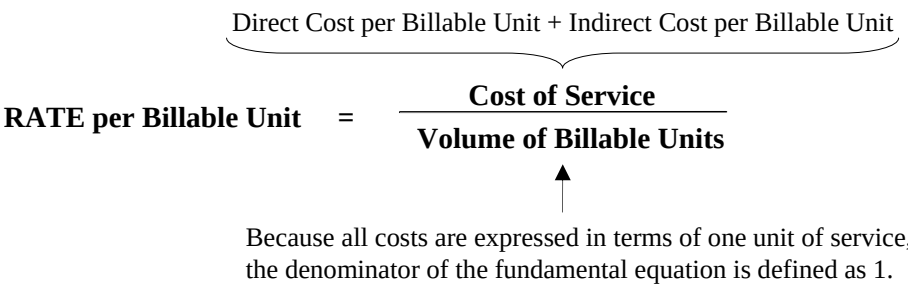


Billable Unit

Summary of Methodology: Estimate the cost to produce one unit of service as defined by the billing metric.

Description of Approach: This component-based approach is used when the forecast-based approach, which is considerably less labor intensive, is not considered possible or appropriate for a service. This approach entails identifying individual cost components within a service, amortizing them over their expected useful life, and determining the quantity of each component that is required to produce one billable unit of service. As a result, this methodology does not work well when there are a significant number of cost components that are shared resources. This approach is valid when the historical data is not sufficient to perform Historical/Trend Forecasting or when the nature of the service does not lend itself well to Historical/Trend Forecasting.

Relationship to the Fundamental Rate Equation:

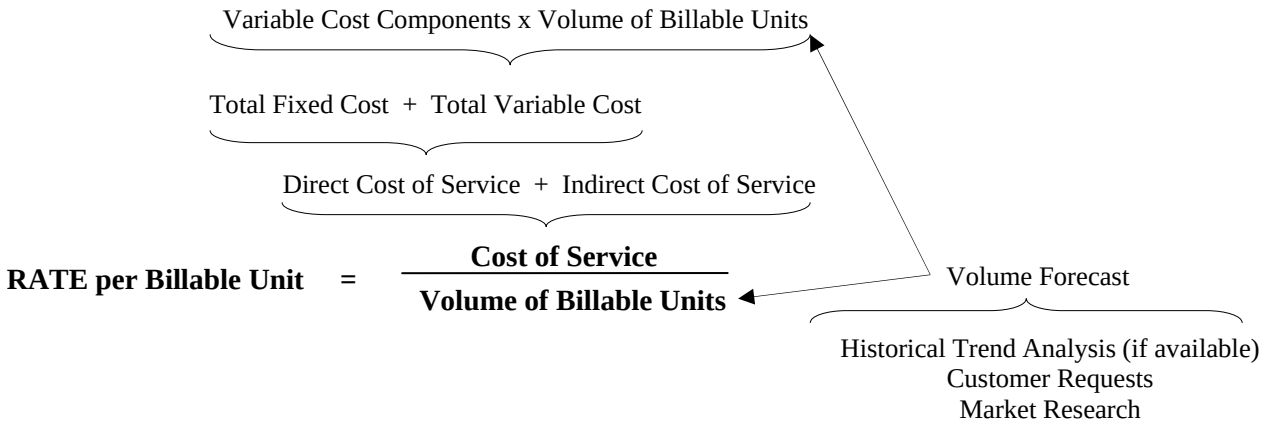


Service

Summary of Methodology: Estimate the total cost of a service over the target period (usually a fiscal year) and divide by the expected volume of service to be provided over the period.

Description of Approach: This approach entails identifying individual cost components within a service, amortizing them over their expected useful life, and determining how the quantities of each component increase with growth in the service, then applying the volume estimate to the cost model to determine the quantity and cost of each component at the expected volume level. This methodology is used most often for setting the initial rate for a new service.

Relationship to the Fundamental Rate Equation:



Of these three, the Billable Unit and the Historical/Trend Forecast processes are by far the most commonly used. Section 2.5 Methodologies, provides more detail on the steps required for each process and the service characteristics that determine which process is used.

2.4 OVERARCHING CONCEPTS

As stated above, the three methodologies share the same foundation in that each must accomplish the following three actions to set a rate:

- Define the Billable Unit
- Estimate the Cost of Service
- Estimate the Volume of Billable Units

Although the methodologies use different processes and tools to accomplish the same task, there is considerable common ground regarding these three actions. This section will discuss the general concepts and terms that are applicable to more than one methodology and Section 2.5 Methodologies will provide the information specific to each methodology with detailed examples.

2.4.1 Defining the Billable Unit

Defining the Billable Unit is the process of determining what metric will be used to measure customer consumption of DTS services. Having a well defined Billable Unit is required for all rate analysis methodologies; however, since the task of defining the Billable Unit is only necessary when a service is first established or if it materially changes, it is rarely performed as part of the DTS rate maintenance process. However, redefining the Billable Unit may be necessary for existing services when feedback from customers or internal staff indicates that the current billing approach is somehow deficient. The table below summarizes the three fundamental approaches to chargeback. The Billable Unit definition for each service will be reflective of one of these approaches.

Summary of Chargeback Approaches	
Chargeback Approach	**Examples of Billable Units**
Measured Usage - Customers are charged based on their usage of a service by paying a rate per unit of utilization. This model is used primarily for services in which significant sharing of resources occurs, such as mainframe processing and storage.	CPU Hour - Mainframe Processing GB Month - Storage
Subscription - Customers are charged a flat rate for the service regardless of actual utilization. This model is used primarily for services in which there is very little sharing of resources.	Mailbox per Month – Email Server per Month – Server Hosting
Direct Charge - Customers are charged the actual cost incurred by the DTS. This model is used primarily in cases where a customer's requirements are unique and therefore, not appropriate for inclusion in rates that would be charged to other customers. It is also used for services that are driven primarily by outside vendors.	Dedicated Resources Consulting

The selection of the chargeback approach and the definition of the Billable Unit can have a profound effect on the marketability of the service, the effectiveness of cost recovery, the rate setting methodology used and the administrative tasks required to perform the chargeback processes. Thus, defining the Billable Unit can be one of the most subjective tasks of setting a rate and requires that many factors be considered.

Factors to Consider

In order to match revenue to cost as effectively as possible, the DTS strives to define billing metrics with the strongest connection to the underlying cost drivers as possible. However, consideration of the other factors sometimes requires that a different metric be used. The next three most influential factors are consideration of customer behavior, simplicity and fairness. There are inherent tradeoffs between these factors. The most common tradeoffs are between the Connection to Cost Driver, Simplicity and Fairness because maximizing the connection to the cost driver typically results in less bundling of services and more complicated rate structures, which in turn, decreases the simplicity of DTS billing processes and customer invoices but increases fairness as more granularity in rates minimizes the chances of customers paying for services they do not require. As described in

Defining the Billing Metric – Factors to Consider
Connection to Cost Driver – How representative is the Billable Unit of what really drives the cost of the service?
Customer Behavior – How does the billing metric influence how the customer consumes service?
Simplicity – Can billing information be collected relatively easily? Can customers understand their invoice?
Fairness – Does the billing metric provide for the equitable distribution of cost to customers?

Section 1.2 above, the DTS is under constant pressure from stakeholders to move rate structures in contrary directions based on each stakeholder's respective priorities.

Process for Defining the Billable Unit

Because the interactions between the factors mentioned above may not be immediately apparent, the process for defining the Billable Unit for new services can be an iterative one. The table below outlines the process including how and when the factors are usually considered.

Process for Defining the Billable Unit
1. **Estimate the scope of the service to be provided for the proposed rate.** It is essential that there is an initial estimate of the service level and features that will be provided under the proposed rate.
2. **Select a provisional Billable Unit.** In most cases, the rate analyst will need a provisional Billable Unit in order to frame the cost analysis for the service. This task can usually be accomplished easily using knowledge of the cost drivers, customer expectations, marketability, and industry standards.
3. **Perform Cost Analysis.** As the cost analysis progresses the rate analyst will discover how the characteristics of the service may cause tradeoffs between the Factors.
4. **Assess the Cost Analysis for Potential Billing Issues.** Once the Cost Analysis is complete an assessment can be made regarding whether or not the provisional Billing Metric represents the best balance of the Factors. This step may require interaction with customers to get feedback on how they would react to the billing structure and internal staff to determine if there is a billing structure that would be more appropriate.
5. **Redefine scope of service or Billable Unit, if necessary.** To the extent that the provisional Billable Unit was not considered the best fit, either the scope of the service or the definition of the Billable Unit must be revised. The most common change is to pull a service component out of the scope and charge for it separately, sometimes using a different billing approach (e.g., pulling a one-time cost out of a subscription and billing it as a direct charge).
6. **Repeat process as necessary to reflect changes made in Step 5.**
7. **Formalize the scope of service and the Billable Unit.** Upon completion of the process the results are formalized in a service description and rate schedule to be used for the review and approval process and ultimately the published service catalog.

2.4.2 Estimating Cost of Service

General Treatment of Costs

A second requirement for determining a rate is the estimation of the cost of providing the service. Because DTS rates are typically charged on a monthly basis, include all aspects of delivering the service, and are expected to be consistent over some period of time (typically at least a year) the cost of the service must be distributed over time in order to align the cost analysis and tracking with the expected revenue stream. To do this, the DTS typically spreads the purchase price of each cost component over the expected useful life of the product. In the Billable Unit and Service methodologies detailed in the next section, this calculation is performed for each cost component. Because the cost information in the Historical/Trend Forecast methodology is the DTS cost accounting system which already tracks costs in this manner, there are no explicit steps to spread costs over time in that methodology.

Role of Cost Accounting System

An important tool that can be used to analyze the Cost of Service is the DTS' Cost Accounting System. The DTS maintains a cost accounting system that takes all expenditures and spreads them over time and organizes them by service. The system is a key tool for monitoring the financial performance of services because the revenue that is collected for each service can be compared directly to the cost of providing the service and thus

illustrates the cost recovery status of each service. It is important to note that the cost accounting system is not a rate setting application. It is inherently backward looking because it is driven by actual expenditures and as such, cannot provide the forward looking cost estimate that rate setting requires. However, the system and the rules that govern how costs are allocated within it do play an important role in the rate setting process. When performing a component-based cost analysis for the purpose of setting a rate, the cost of each component is calculated according to the Cost Allocation Business Rules (Appendix B) in order to align the cost analysis as accurately as possible to how the costs will appear in the cost accounting system if and when the expenditures are made. The table below summarizes how each methodology draws on the cost accounting function beyond conformance to the underlying cost allocation rules:

Role of Cost Accounting System in the Rate Setting Methodology	
Methodology	**Interaction with Cost Accounting System**
Historical/Trend Forecast	This methodology relies heavily on information from the cost accounting system. The analyst can: • Use the cost/revenue comparison from previous periods to estimate the magnitude of a rate adjustment. • Establish a historical cost trend to forecast the costs in the target period. • Analyze the interaction of utilization and cost trends and forecast the cost for the target period based on the estimated volume.
Billable Unit	Cost accounting information can be used to establish or verify the reasonability of component cost assumptions (prices, staffing ratio assumptions, miscellaneous costs, etc.) for a service. For example, if a staffing assumption is 1 staff per 20 billable units, the analyst can check to see if the history is reasonably consistent with the assumption.
Service	Typically, this methodology is used only when historical data is not considered adequate for forecasting costs. Thus, if any cost accounting information is available, its use would probably be limited to that described above.

Direct and Indirect Costs
All costs attributed to a service can be categorized as "direct costs" or "indirect costs".

> *Direct Costs* are those clearly attributable to a single service.
>
> *Indirect Costs* include not only those things that are traditionally characterized as "overhead" (facility, accounting, human resources, customer relations, etc.) which are labeled Administrative Overhead at the DTS, but also a share of internal service departments such as Service Desk, Security, and Change Management. Indirect costs are allocated to each service according to the most appropriate cost allocation metric (head count, percentage of total service tickets, etc.). The allocation metrics are defined in the Cost Allocation Business Rules (Appendix B).
>
> *Total Cost* is the sum of the direct and indirect costs for a service.

Because the cost information used in the Historical/Trend Forecast methodology is based on the total cost of the service, there is no need to categorize costs as direct or indirect in that methodology.

2.4.3 Estimating Volume of Billable Units

There are three primary sources of information for estimating the volume of Billable Units the DTS will be asked to provide to customers during the target period:

1. Historical Trends – If historical utilization data is sufficient to create a trend analysis that is reasonably representative of the ongoing changes in the volume for a service, then using a simple forecast methodology can be a very effective and efficient way of estimating the volume.
2. Customer Requests – The DTS may have knowledge of specific customer requests for service as a result of consultations on current or future projects or from customers submitting service requests. This information can also be used in coordination with the historical trend, in which case, the analyst must make a decision regarding whether or not the specific information is already reflected in the trend.
3. Market Research – Actively engaging customers regarding their interest in a service is often critical in the rate setting process when a service is new and the Volume of Billable Units is not just an increase in the existing workload of a customer application but instead is dependent on the customer making a business decision to migrate to a new solution. Market research can include customer surveys, customer forums, or meetings with customer CIOs.

The process for estimating volume will vary by service depending on the quality and availability of information. For example, mature service can rely heavily on historical trends while new service will need to rely heavily on market research.

By definition the Billable Unit methodology constructs the rate in terms of one billable unit. Therefore, an estimate of the Volume of Billable Units is not required for the purpose of setting the rate in that methodology. In contrast, the estimate of volume is critical for both the Service and Historical/Trend Forecast methodologies.

Once the volume estimate is established, it can be used as appropriate in each of the methodologies. In the Service Methodology, the Volume of Billable Units will be used to determine the quantity of each cost component that is needed to provide the projected volume of service. In the Historical/Trend Forecast methodology the analyst will check to see if it the volume estimate will have a material effect on the cost estimate. This typically entails making sure that the two forecasts are consistent with the historical relationship between the cost and volume. Once the cost and volume forecasts are in place the Estimated Cost of the Service is divided by the Estimated Volume of Billable Units to determine the rate.

2.5 METHODOLOGIES

2.5.1 Historical/Trend Forecast

The Historical/Trend Forecast methodology of estimating costs is relatively simple. It is employed for services that enjoy reasonably predictable costs and utilization and relies heavily on historical information from the cost accounting system. Because the cost accounting system spreads the impact of depreciable cost components over their useful life, there are rarely significant variances in expenditures as reported by the system. As a result, the data is well suited for fairly simple time series analysis such as linear trend projections. Indirect Costs are included in the cost accounting data, so there is no need to split them out and analyze them separately. The rates analyst will consider the cost trend over the last two or three years to determine the cost forecast.

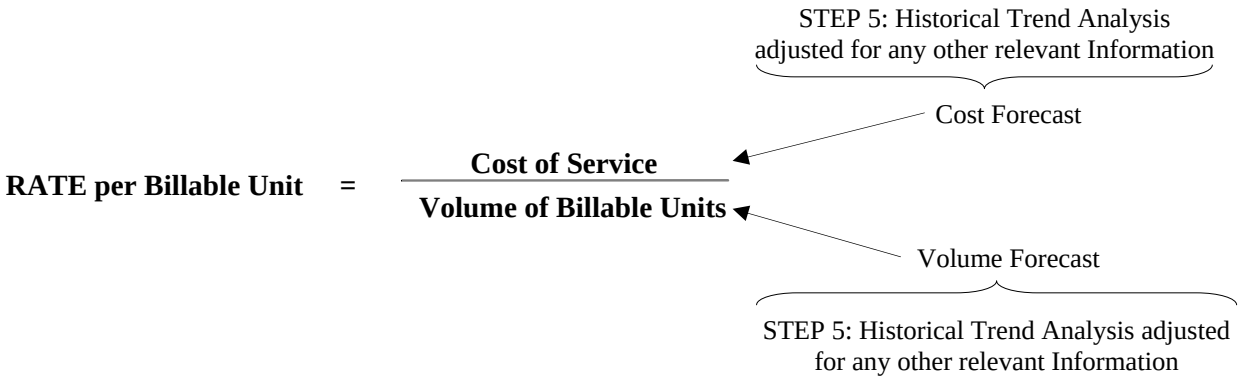
All cost estimates made using this methodology also consider any other information that may materially affect the accuracy of the forecast. This information may be an unusual or one-time change in the historical data that significantly skews the trend away from what is reasonable to expect will occur in the future or an event in the future cannot be reasonably assumed to be reflected in the trend. For example, if a major mainframe application is moved from the DTS to a private sector vendor, a downward trend in expenditures could occur. However, because that was a one-time event and is not representative of the cost trend of the service as a whole moving forward, adjustments must be made in order to produce a viable forecast. In the case of this example, the analyst would likely remove the cost of hosting that application (or a reasonable estimate thereof) from the historical data to develop a trend projection that is representative of the ongoing level of business.

Historical/Trend Forecast Methodology – Service

General Description of Process:

1. Define Billable Unit (if necessary)
2. Gather historical cost, revenue and utilization information from cost accounting and billing systems.
3. Gather cost or volume information that would not be reflected in the historical information (known changes).
4. Determine if a rate adjustment is necessary using the historical revenue/cost information and considering any significant future changes.
5. If rate adjustment is necessary, forecast costs and volume using the information from Steps 2 and 3.
6. Calculate rate by dividing forecasted cost of service by the forecasted volume.

Equation:



Typical Service Characteristics:

- Stable and predictable costs and volume
- Weak nexus between billing metric and cost driver
- Considerable amount of resource sharing between customers
- High diversity of cost drivers

Examples:

- Mainframe Processing and Storage

2.5.2 Billable Unit

The Billable Unit methodology involves building a service rate from its component parts. This granular approach requires the rate analyst to separate direct and indirect costs because they are estimated using different processes. The table below summarizes the methodology and additional narrative and an example follows to help illustrate the process.

Billable Unit Methodology

General Description of Process:

1. Define Billing Metric (if necessary)
2. Identify all direct cost components
3. Identify the following attributes for each cost component:
    a. Unit Price with Unit Description
    b. Useful Life in Months
    c. Quantity required to produce one Billable Unit of the service
4. Calculate the Cost per Billable Unit for each Direct Cost Component.
5. Estimate Indirect Costs per unit consistent with historical allocations in the cost accounting system or apply Administrative Fee.
6. Sum the Direct Cost per Billable Unit and the Indirect Cost per Billable Unit.

Equation:

STEP 4: $\frac{\text{Unit Price}}{\text{Useful Life}} \times \text{Quantity per Billable Unit}$

STEP 6: Direct Cost per Billable Unit + Indirect Cost per Billable Unit

$$\textbf{RATE per Billable Unit} = \frac{\textbf{Cost of Service}}{\textbf{Volume of Billable Units}}$$

Because all costs are expressed in terms of one unit of service, the denominator of the fundamental equation is defined as 1.

Typical Service Characteristics:

- Very strong nexus between the charging metric and the cost driver
- Very little fixed or shared cost components (thus, volume doesn't matter)
- Direct passthrough of a DTS cost to the customer

Examples:

- Midrange Server Hosting
- Any passthrough charges
- Small add-ons, like additional memory
- Consulting Services

The table to the right is an example of a high-level breakdown of the major components of a server hosting subscription rate. This example illustrates the conceptual separation of Direct and Indirect Costs. Using the Billable Unit methodology, all of the components displayed are calculated in terms of one Billable Unit. This methodology does not work well in cases where there are a significant number of shared resources. The Server Hosting service is used as an example here because it is one of the best fits for this methodology. Almost every Direct Cost component can easily be defined in terms of a server and there is very little sharing of resources with other servers (just staff and racks).

Sample Result Billable Unit Methodology

Service: Server Hosting
Billing Metric: per Server per Month

Direct Costs	
Cost Component	Monthly Cost per Billable Unit
Server	$ 250.00
Standard Software	$ 75.00
Rack Space/Cabling/Power	$ 5.00
Software Maintenance	$ 10.00
Staff Support	$ 375.00
Misc	$ 2.00
Total Direct Cost per Unit	**$ 717.00**
Indirect Costs	
Change Management	$ 16.65
Service Desk	$ 25.53
Security	$ 27.75
PC/LAN Support	$ 55.50
Network	$ 57.72
Administrative Overhead	$ 209.77
Total Indirect Cost per Unit	**$ 392.91**
Total Monthly Cost per Unit	**$1,109.91**

Estimating Direct Costs

The identification of all direct cost components and the calculation of Monthly Cost per Billable Unit for each is a fundamental step in this component based approach to rate setting. The listing of cost components and their attributes as described in of steps 2, 3 and 4 of the methodology are typically displayed in the manner shown below.

Cost per Billable Unit Calculations for Direct Cost Components

Service: Server Hosting
Billing Metric: per server per month (STEP 1)

Direct Costs					
STEP 2	STEP 3				STEP 4
Cost Component	Unit Price	Unit Description	Useful Life (mo)	Qty	Cost per Billable Unit
Server	$ 12,000	per server	48	1	$ 250.00
Standard Software	$ 3,600	per server	48	1	$ 75.00
Rack Space/Cabling/Power	$ 240	per server	48	1	$ 5.00
Software Maintenance	$ 120	per server/per year	12	1	$ 10.00
Staff Support	$ 90,000	per year/per 20 servers	12	0.05	$ 375.00
Misc	$ 4,800	per service (200 servers)	12	0.005	$ 2.00
			Total Direct Cost		**$ 717.00**

Estimating Indirect Costs

Once the Total Direct Cost is estimated, the analyst can move on to the Indirect Cost estimate. For the purpose of rate setting, the analyst will typically estimate these charges by expressing the historical charges as a percentage of the total costs and apply those percentages to the current estimate of total cost. For example, if PC/LAN Support costs allocated to the Server Hosting service represented 5% of all costs allocated to the service in the previous year (per the cost accounting system), then the analyst would estimate PC/LAN Service costs in the rate calculation as 5% of the total estimated cost, unless there was any additional information to indicate that such an assumption is unreasonable.

Cost per Billable Unit Calculations for Indirect Cost Components

Total Direct Cost		**$ 717.00**
Indirect Costs (Step 5)		
	% of Total Cost	
Change Management	1.5%	$ 16.65
Service Desk	2.3%	$ 25.53
Security	2.5%	$ 27.75
PC/LAN Support	5.0%	$ 55.50
Network	5.2%	$ 57.72
Admin Overhead	18.9%	$ 209.77
Total Indirect Cost	35.4%	**$ 392.91**
STEP 6: **Total Monthly Cost per Billable Unit**		**$ 1,109.91**

In order for the analyst to determine the allocation for each Indirect Cost the Total Cost must be calculated and then the Percent of Total figures applied:

$$\frac{\textbf{Total Direct Cost } (\$717.00)}{\textbf{1 – Sum of Indirect Cost \% } (1 - 35.4\%)} = \textbf{Total Cost } (\$1{,}109.91)$$

Total Cost	x	% of Total Cost per Indirect Service	=	Cost per Indirect Service
$1,109.91	x	1.5% (Change Management)	=	$16.65

The calculations for estimating Indirect Costs outlined above are by far the most commonly used for this rate setting methodology, since trying to determine indirect charges for one Billable Unit in terms of the indirect cost allocation metric would add complexity to the analysis without a commensurate increase in the quality of the end product.

It is important to note that one of the uses of the Billable Unit methodology is for services or customer purchases that are characterized as "passthroughs" to the customer. When a customer is charged a passthrough, whether it is for a service or for a dedicated hardware or software product that doesn't get captured in standard service rates, the customer is not charged the typical Indirect Costs as indicated above. Instead, an Administrative Fee is added to the charge to help recover the one-time administrative costs associated with these types of activities.

2.5.3 Service

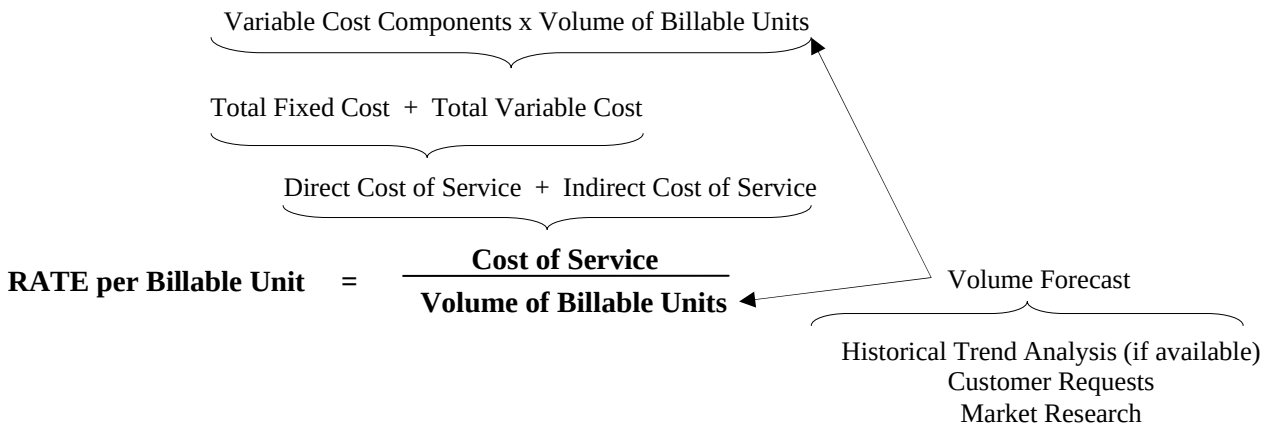
The difference between this methodology and the Billable Unit methodology is that instead of identifying costs in terms of one unit, costs are estimated for the entire service at a given volume level. This methodology is not used very often because it typically requires significantly more analytical resources than the other methodologies and in most cases does not result in a commensurate increase in the quality of the end product. This methodology is used when historical information is not sufficient to use the Historical/Trend Forecast methodology and the nature of the service is such that the Billable Unit methodology is not appropriate. The most common application of this methodology is for new services.

Service Methodology

General Description of Process:

1. Define the Billing Metric (if necessary)
2. Identify all direct cost components
3. Identify the following attributes for each cost component:
    a. Unit Price with Unit Description
    b. Useful Life in Months
    c. Fixed or Variable Cost
    d. Quantity Driver
4. Calculate Monthly Cost for each Cost Component.
5. Estimate the expected Volume of Billable Units over the target period using historical data, market research, known service requests and any other relevant information.
6. Calculate the Quantity of each cost component needed (per the Quantity Driver attribute) at the estimated Volume of Billable Units.
7. Calculate Monthly Cost for each component at the estimated Volume of Billable Units. (Step 4 x Step 6)
8. Sum Monthly Cost of all cost components to determine Direct Cost of Service.
9. Estimate Indirect Costs consistent with historical allocations in the cost accounting system or a model based on the DTS Indirect Cost allocation rules.
10. Sum Direct and Indirect Costs for Service for the Estimated Total Cost of Service.
11. Divide Total Cost of Service by Estimated Volume of Billable Units to determine the Rate.

Equation:



Typical Service Characteristics:

- Little or unreliable historical information
- Service in transition – stratifying an existing service into tiers, materially changing how the service is provided
- Weak nexus between billing metric and cost driver
- Diversity of cost drivers within the service
- Large fixed costs – making volume a critical variable in the cost per unit calculation

Examples:

- Server Based Computing
- Stratification of Storage services
- New Services

Estimating Direct Costs

The process for determining direct costs is very similar to that described above in the Billable Unit methodology. However, in order to calculate the cost of each component in terms of the service as a whole, additional attributes must be identified for each cost component as indicated in Step 3:

Cost Component Attributes (Step 3)	Billable Unit	Service
Unit Price w/ Unit Description	X	X
Useful Life in Months	X	X
Quantity to produce one unit	X	
Fixed/Variable		X
Quantity Driver		X

The attribute of Fixed/Variable is simply the categorization of the cost component as fixed or variable for the purpose of clearly indicating which cost components will not increase in quantity or cost as the Volume of Billable Units increases. Fixed costs are those that do not vary even when resource usage changes. Variable costs, on the other hand are those that vary with some factor, such as usage or time. The Quantity Driver attribute is essentially the answer to the question "What determines the quantity of the cost component at a particular volume level?" For fixed costs, the answer is simply the fixed amount that is required to support the service. For variable costs the quantity driver can be the product of several operational assumptions.

Variable Costs

By definition, a variable cost component will vary by some factor. The factors by which the component varies should be captured in the cost component attributes, usually the quantity driver. The quantity driver attribute for a variable cost is typically the answer to the question: "What requires that one more unit of the component be purchased?" Often the answer to this question is related to other cost components or operational assumptions regarding how the service will be delivered. As a result, the quantity driver may not be expressed in terms of the Billable Unit. The example below illustrates this fact. The quantity of Server Administration staff is driven by the number of servers used for the service. In order to calculate the need for servers at a particular volume level (in mailboxes), all three of the operational assumptions cited must be considered: 1) the increments in which server capacity will be purchased, 2) the number of active servers in a cluster and 3) the estimated number of mailboxes each active server can support. Each quantity driver defined in Step 3a should, through either a direct relationship, a relationship to another cost component, and/or an operational assumption, provide for the quantity of the cost component to be computed based on a volume assumption.

Quantity Drivers for Variable Direct Cost Components: Variability and Interaction with Operational Assumptions

Service: Sample Email
Billing Metric: per mailbox per month

Cost Component*	Quantity Driver	Calculation of Quantity from Volume of Mailboxes
Mailbox Server	8 per cluster	8 x Round up (# of mailboxes/(Mailboxes per active server x active servers per cluster)
Exchange Software	per mailbox server	8 x Round up (# of mailboxes/(Mailboxes per active server x active servers per cluster)
Scanmail Exchange Suite License	per mailbox	# of Mailboxes
Scanmail Exchange Suite Maintenance	per scanmail license	# of Scan Mail Licenses
Additional Messaging Staff Support	per 25K mailboxes	Round down (# of mailboxes/quantity driver)
Server Administration Support	per 25 servers	Round up (# of servers/quantity driver)

Operational Assumptions:

- Server capacity will be purchased in per cluster increments
- Clusters have 8 mailbox servers (6 active, 2 failover)
- # of mailboxes per active mailbox server = 5,000

* This is a small sample of variable cost components from a service, the number of cost components and operational assumptions is typically much greater than what is displayed in this table.

As this example illustrates, this methodology can create complex relationships between cost components and the operational assumptions regarding how the service is provisioned. The inherent complexity of modeling all these relationships is the primary reason that this methodology is rarely used.

Once all the variable direct cost components have been identified and all attributes assigned (Step 2 and 3), the following can be calculated for each of the cost components (the last three columns in Sample 2) once the Volume of Billable Units is estimated (Step 5 – executed per the description in Section 2.4 Overarching Concepts):

1. Monthly cost of one unit of the cost component (Step 4)
2. Quantity of the cost component required at a given volume level of Billable Units (Step 6)
3. The total monthly cost of the cost component at the given volume level (Step 7)

The sum of the total monthly cost of all variable direct cost components represents the Total Variable Cost of the service at a given volume level.

Fixed Costs

By definition, a fixed direct cost component will not vary with an increase in the amount of service provided. Therefore, the total monthly cost of a fixed cost component is the product of the Monthly Cost multiplied by the quantity of the component required to support the service (part of Step 7). The sum of the total monthly cost for each fixed cost component represents the Total Fixed Cost of the Service and when added to the Total Variable Cost of the Service, the sum represents the Direct Cost of the Service.

The example on the next page illustrates how an analyst would put together the cost components, their attributes (columns 2-4) and the results from the necessary calculations (last three columns) in order to determine the contribution of each to the cost of the service at a given volume level.

Indirect Costs

Indirect costs can be applied in a variety of ways under this methodology. If there is historical data sufficient to justify the use of the percentage of total cost calculation as described above in the Billable Unit methodology, it represents the most straightforward methodology for estimating the allocation of indirect costs to the service. However, as is often the case when the Service methodology is used, there may be little reliable historical data upon which to base an estimate of the indirect costs. Therefore, the rate analyst must determine the most appropriate way to estimate the service's share of indirect costs based on the information available. The most common way of estimating these costs is to use a similar service as a proxy. The allocation of indirect costs does not typically vary substantially from service to service or from year to year so estimating the allocations based on experience of other services for the purpose of rate setting is a reasonable practice and is not usually necessary beyond the initial rate setting because the service will have developed historical data from which the next estimate can be based.

In the Indirect portion of the example on the next page, the numbers are based on the "Percent of Total" methodology. However, there is a listing of other options that could be used to estimate indirect costs. Often, an analyst should use a mix of methodologies in order to produce the best estimate for each Indirect Cost component.

STEP 1: Define the Billable Unit

STEP 5: Estimate Volume of Billable Units

Sample Result of Component-Service Unit Methodology*

Service: Sample Email
Billing Metric: per mailbox per month

Direct Costs

Cost Component	Fixed/ Variable	Unit Price	Unit Description	Useful Life (mo)	Qty driver	Monthly Cost	Qty @ 40,000 mailboxes	Monthly Cost @ 40,000 mailboxes
STEP 2			STEP 3			STEP 4	STEP 6	STEP 7
Minimum Staffing	Fixed	$ 90,000	Per position	12	3 for minimum coverage	$7,500.00	7	$22,500.00
Test Servers	Fixed	$ 12,000	per server	48	5 for test environment	$ 250.00	5	$ 1,250.00
Standard Server Software	Fixed	$ 3,600	per server	48	1 per test server	$ 75.00	5	$ 375.00
Exchange Software	Fixed	$ 2,400	per license	48	1 per test server	$ 50.00	5	$ 250.00
Mailbox Server	Variable	$ 12,000	per server	48	8 per cluster	$ 250.00	16	$ 4,000.00
Standard Server Software	Variable	$ 3,600	per server	48	per server	$ 75.00	16	$ 1,200.00
Exchange Software	Variable	$ 2,400	per license	48	per mailbox server	$ 50.00	16	$ 800.00
Scanmail Exchange Suite License	Variable	$ 3.60	per license	36	per mailbox	$ 0.10	40,000	$ 4,000.00
Scanmail Exchange Suite Maintenance	Variable	$ 1.20	per license/per year	12	per scanmail license	$ 0.10	40,000	$ 4,000.00
Additional Messaging Staff Support	Variable	$ 90,000	Per position	12	per 25K mailboxes	$7,500.00	1	$ 7,500.00
Server Administration Support	Variable	$ 90,000	Per position	12	per 25 servers	$7,500.00	1	$ 7,500.00
					Total Monthly Direct Cost @ 40,000 mailboxes		STEP 8	**$53,375.00**

Indirect Costs (STEP 9)

	% of Total Cost (if history is available and relevant)	or	Estimate of Indirect Cost Based on other Services or the best available information (examples below)	Monthly Costs @ 40,000 mailboxes
Change Management	2.5%		Charges to similar services	$ 2,052.88
Service Desk	2.0%		% of total Cost for similar service	$ 1,642.31
Security	3.0%			$ 2,463.46
PC/LAN Support	4.0%		Anticipated headcount as % of total head count x anticipated total cost of PC/LAN	$ 3,284.62
Network	5.5%			$ 4,516.35
Administrative Overhead	18.0%		Email Direct cost as % of all direct costs x anticipated total cost of Administrative Overhead	$14,780.77
	35.0%		**Total Monthly Indirect Cost**	**$28,740.39**

Operational Assumptions:

- Server capacity will be purchased in per cluster increments
- Clusters have 8 mailbox servers (6 active, 2 failover)
- # of mailboxes per active mailbox server = 5,000

STEP 10: **Monthly Total Cost at 40,000 mailboxes** **$82,115.39**

STEP 11: **Monthly Total Cost per Mailbox** **$2.05**

* This is a small sample of variable cost components from a service, the number of cost components and operational assumptions is typically much greater than what is displayed in this table and the result of this sample analysis has no relation to actual costs of any DTS service.

2.6 RATE MONITORING PROCESS

The DTS rate setting processes require that rates be set based on estimates of future cost and volume estimates. As a result, rates cannot be truly accurate. The billing and cost accounting systems serve as the tools for tracking the true cost of service and customer utilization. Together, these two systems allow the DTS to monitor the performance of services in terms of their over or under recovery of costs. The cost accounting system captures all actual expenditures made, spreads them over their expected useful life and distributes them to Cost Centers based on the services they support. Comparing the revenue collected from a service against the cost allocated to it in the cost accounting system is the primary financial performance monitoring process for DTS services. This information is reported in a format similar to that in the table below and is distributed to all service managers on a monthly basis and includes year-to-date figures.

Cost Center	Title	Expenses	Revenue	Over/Under
001	Mainframe Batch Processing	$50,000,000	$55,000,000	10%
038	Print	$2,000,000	$1,500,000	-25%
049	Tape Mount	$1,000,000	$1,020,000	2%
055	Server Based Computing	$1,500,000	$1,000,000	-33%
300	Disk Storage - Mainframe	$10,000,000	$10,500,000	5%

It is important to note that there may be multiple rates per cost center so the over/under is not always indicative of the performance of a particular rate but rather the performance of the service as a whole. The DTS currently has over 200 different rates, many of which are for small additional components of a service. It is not reasonable to create cost centers for each rate because it would create an exponential increase in the complexity of the cost accounting system without a commensurate increase in the value of the end product. Under the current reporting process, service managers and the financial management team can track the overall financial performance of services and see when a disconnect between cost and revenue begins to develop, indicating the need for rate maintenance. When there is a need for rate maintenance in a service that includes multiple rates, it is rare for the service manager to be unaware of the reason. The typical reasons for maintenance are changes in volume of service provided, significant changes in cost or changes in how the service is provided. In any case, the service manager will be able to quickly identify what is driving the need for rate maintenance, which in turn allows the rate analyst to determine how to approach the rate adjustment analysis. For example, if costs are stable but revenues are increasing due to increased utilization, the rate analyst can focus on revising the volume estimate.

As a result of the rate and service monitoring process, the DTS may occasionally determine that it is no longer feasible or in the best interest of the State to provide a particular service. This can result from economies of scale declining as customers move to different solutions or the cost of providing a service may become prohibitive. In these cases, it is likely that a disconnect between costs and revenue will become apparent through the rate monitoring process and drive the discussion of the service's viability. In cases where the disconnect between the rate and cost needs to be maintained for a period of time to allow customers to migrate off the service, the temporary subsidization exception to the Guiding Principle may be used to manage the transition.

3. TEMPORARY SUBSIDIZATION OF SERVICES

The rate setting methodologies presented in Chapter 2 outline the process to establish a rate that is representative of the total cost of the service. Setting rates to fully recover service costs is an important part of the effective management of centralized IT service because it provides a basis by which the DTS and its customers can assess the value and cost effectiveness of DTS services. The goal of aligning rates with cost is established in Guiding Principle Number 5:

> 5. The revenues generated from the rates should fully recover the costs of the service, plus allowable reserves for working capital and equipment replacement. In order to facilitate the adoption of new services and/or the transition of customers to more efficient technologies, this principle may be suspended for a specific service for an actively managed period of transition. This exception will only be made for a documented policy objective and for a defined time period, after which the service is required to be compliant with the principle.

Guiding Principle Number 5 also provides for the suspension of the principle under certain conditions. This chapter will describe how those conditions will be met and managed when the DTS proposes to invoke it and describe the methodology for determining a service rate when a temporary period of subsidization is deemed appropriate.

3.1 BUSINESS NEED FOR TEMPORARY SUBSIDIZATION

Without temporary subsidization it would be very difficult for the DTS to successfully introduce new services. If rates are set exactly to cost, the rates for new services would be much higher for early adopters and fall over time as economies of scale produce a lower rate. Such a situation would create an incentive for customers to wait until rates decrease. This could prevent the service from growing at all, which would be counterproductive to the state's goal of centralizing the responsibility for shared services. This situation is an inherent risk of most business ventures and without State IT policy changing to mandate the use of DTS services, the DTS and its customers will have to accept some level of that risk in order to introduce new services.

3.2 METHODOLOGY

The exception to the principle of aligning rates to the cost of service provided in Guiding Principle Number 5 requires that:

- The Policy Objective for the Temporary Subsidization be documented.
- The Temporary Subsidization be limited to a defined transition period.
- The Transition Period be actively managed.
- The rates must be realigned with the cost of service at the end of the transition period.

The intent of these parameters is to minimize the financial risk of underutilized services by requiring that a goal and timeline be defined and managed, with the caveat that if the goal is not reached the DTS will be required to raise rates for those who have transitioned to the service.

Given the pressure these parameters create on the DTS to be successful in managing any proposed period of temporary subsidization, the DTS has the following business requirements for initiating such a period:

- Thorough understanding of the factors affecting the marketability of the service (price, quality, features).
- Realistic expectations of the volume and timing of customer adoption.
- Thorough cost analysis that models service costs over time and volume.
- High level of confidence that service levels will meet or exceed customer expectations.

- High level of confidence that the proposed subsidization adequately decreases the barrier to entry the price poses for potential customers.
- High level of confidence that the DTS has the organizational capacity to meet the Customer Adoption Assumption.
- High level of confidence that the DTS can bring the necessary resources to bear (securing all necessary authorities) with sufficient agility to meet customer demand.
- Understanding of the financial risk in terms of investment that may not be recovered and the potential increase in rates to customers at the end of the period.

The methodology described in this chapter provides the following to address these business requirements:

- **Cost Recovery Objective** which clearly states the break even point that the DTS is trying to achieve and defines the transition period as required by the Guiding Principle.
- **Cost Analysis** that is both detailed and scalable to allow internal and external stakeholders to evaluate the completeness of the analysis and the reasonability of the economies of scale assumed to arrive at the proposed rate.
- **Customer Adoption Assumption** reflecting the expected pattern of utilization as customers transition to the service. Further, it requires that optimistic and pessimistic Customer Adoption scenarios be presented to assist in assessing the financial risk of the proposed rate.

It is very important to realize that this methodology is not intended to create single absolute answer. It is intended to assist in the identification of a rate that represents the best fit of price, marketability, and risk through the objective analysis of key factors and tools for assessing the risk of any rate level. The rate that this methodology produces is based on assumptions of customer behavior and cost drivers that may not be proven and can be very hard to predict. The methodology is intended to focus Operational, Financial and Customer Delivery resources on the critical questions that affect the financial risks of temporary subsidization. For example, the methodology requires operational staff to identify all cost components and make assumptions about how the need for each changes as the service grows. The list of components and the operational assumptions are documented in this methodology and the service manager is accountable to the extent that reality differs substantially from the model. This increases the accountability of operational staff to the rate setting process. The same principle applies to the Customer Delivery staff in the form of the Customer Adoption Assumption. Services that require Temporary Subsidization often pose significantly greater financial risks than any other rate setting process. As a result, it is critical that all the appropriate staff are accountable for their role in assessing and mitigating that risk. Further, by documenting a detailed cost model and a Customer Adoption Assumption, variance from the plan can be assessed during the transition period and corrective action can be taken if it variances become too great.

3.2.1 Summary of Methodology

The methodology for disconnecting a rate from cost for the policy objective of migrating customers from an existing service to another service for operational or financial reasons is straightforward. This could be done proactively by imposing a surcharge on the service for which the DTS is trying to minimize utilization or if costs have already exceeded the historical rate, the DTS may maintain the old rate for a period of time to allow for customers to make migration plans and execute them. In these cases, the financial risk is typically minimal because there is an existing customer base and a clear goal of eliminating or minimizing the use of the existing service, so customers will be fully aware of the proposed change and have the opportunity to consider their options before the end of the transition period (at which point the service goes away or the rate is substantially increased).

The most common policy objective for temporary subsidization of a service is to provide customers incentive to adopt a new service. As described above, there is simply no way to market a statewide shared service at a rate

that will immediately recover its costs. Providing marketable rates at the time of service launch while appropriately mitigating the inherent financial risk of loss-leader pricing is the primary rationale for establishing the methodology described in this section. Further, it is a key objective of the DTS to set the rate such that a rate increase is not required at the end of the transition period.

The rate setting methodology described below is based primarily on the Service methodology described in Section 2.5.3. However, in order to evaluate a proposed rate in terms of the total amount of subsidization that may occur and the financial risk if utilization of the service does not occur according to plan, the service methodology is made scalable by volume and then used to estimate costs over a transition period that is expected to include a significant growth in service utilization.

Temporary Subsidization Methodology

General Description of Process:

A. Identify **Policy Objective** for Temporary Subsidization
B. Set the **Cost Recovery Objective** - Define the break even point in terms of:
    - Direct Cost or Total cost,
    - Monthly or cumulative recovery requirement
    - Define the transition period over which the cost recovery will be achieved.
C. Determine the monthly cost of each component using Steps 1-4 of the Service Rate Setting Methodology (see Section 2.5.3):
D. Execute Steps 6-11 of the Service Rate Setting Methodology (see Section 2.5.3) for the range of potential utilization levels (at some reasonable interval) and create the **Economies of Scale** table with the results.
E. Establish the **Customer Adoption Assumption** by estimating the expected volume for each month of the transition period using historical data, market research, known service requests and any other relevant information.
F. Create the **Cost Forecast**, by modeling the monthly and cumulative cost of the service during the transition period:
    - For each month, indicate the expected volume per the **Customer Adoption Assumption**.
    - For each month, find the corresponding cost per unit at the estimated volume level per the **Economies of Scale** table created in Step D.
G. Use the Cost Recovery Objective to define the Cost and Volume variables in the fundamental rate equation from the **Cost Forecast** created in Step F and solve for the rate.
H. Evaluate the rate and repeat steps E through G as necessary to determine a rate that represents the best balance of financial risk and marketability.

Equation:

$$\textbf{RATE} = \frac{\textbf{Cost Recovery Objective-defined Cost of Service}}{\textbf{Cost Recovery Objective-defined Volume of Billable Units}}$$

Typical Service Characteristics:

- New Services requiring loss-leader pricing to be competitive and avoid penalizing early adopters.
- Service that is no longer competitive or operationally effective as delivered, requiring stable rates over transition period to avoid penalizing the last to migrate (assuming the customer has little control over timing of migration).

Examples:

- Statewide Email
- Server Based Computing

3.2.2 Defining the Policy Objective (Step A)

Defining the Policy Objective is a requirement of the Guiding Principle Number 5 for implementing temporary subsidization and must be documented and presented to the Department of Finance and the Technology Services Board. In most cases the policy objective will be to transition customers for a particular reason that will enhance the effectiveness or efficiency of the utilization of centralized information technology services. Because this rate setting methodology can be very complex and time consuming, the policy objective and decision to pursue temporary subsidization is usually made very early in the process and is typically made by the Technology Services Board or the Director of DTS.

3.2.3 Defining the Cost Recovery Objective (Step B)

The Cost Recovery Objective is the policy decision that defines the break even point that will be used for the purpose of setting the rate. As will be illustrated in Section 3.2.7 Setting the Rate, the Cost Recovery Objective defines the Cost of Service and Volume of Billable Units variables in the Fundamental Rate Equation, which is used to calculate the proposed rate.

Defining the Cost Recovery Objective requires three questions to be answered:

1. Is the objective to break-even to Direct Cost or Total Cost?
2. Is the objective to break-even to Monthly Cost or Cumulative Cost?
3. How long is the transition period?

Questions 1 and 2 define what cost recovery level will represent success of the temporary subsidization period and the third question defines the period of transition over which that goal must be met before the rate is required to be realigned to cost. The Cost Recovery Objective is intended to be a policy decision establishing reasonable parameters for allowing a service sufficient time to mature, grow and be self-sufficient. The rate level itself should not be considered in the process of defining the Cost Recovery Objective. The DTS Financial Management staff will make a recommendation based on its objective assessment of the service and the financial management policies and priorities of the DTS. The final decision is made by the Service Manager or DTS executive. The example to the right is the document that is presented for framing the discussion for the final decision. One of the most critical and subjective parameters of the Cost Recovery Objective is defining the transition period. The table below highlights some of the factors that must be considered to determine what period of transition is reasonable for a particular service. One or more of these factors is often the primary driver for determining the transition period and will be discussed and documented in support of the selected Cost Recovery Objective.

EMAIL – Financial Analysis (Sample)

Cost Recovery Objective

In order to determine a rate based on the finalized cost, volume and operational assumptions, a cost recovery objective must be selected. The following is a list of potential objectives and the one recommended by Financial Management rate staff:

Direct Cost – Monthly Break Even at XX months
By the Xth month, monthly revenue must be greater than or equal to monthly Direct Cost

Total Cost – Monthly Break Even at XX months
By the Xth month, monthly revenue must be greater than or equal to monthly Total Cost

Direct Cost – Cumulative Break Even at XX months
By the Xth month, total revenue collected from the service since launch, must be greater than or equal to total Direct Cost since launch.

Total Cost – Cumulative Break Even at XX months
By the Xth month, total revenue collected from the service since launch, must be greater than or equal to total Total Cost since launch.

Other Options – Other objectives could be developed by replacing the words "must be greater than or equal to" with "within XX% of"

RECOMMENDATION from FINANCIAL MANAGEMENT STAFF:

Total Cost – Monthly Break Even at 24 months

Factors Considered in Defining the Transition Period
Customer Demand – What level of customer demand has already accumulated?
Familiarity with Technology – Are customers already familiar with the technology or is it a solution that they need to learn more about?
Ease of Migration – Is the new service something that departments currently do for themselves? If so, does it require that data be transferred and how is that accomplished?
Operational Capacity – Regardless of customer demand, how quickly can the service grow considering the resources and processes in place at the DTS?
Financial Risk – How do the cost attributes of the service affect financial risk? Should the period be short to apply additional pressure on growth due to a large upfront investment? Should the period be long to allow economies of scale to be reached due to significant fixed costs?

Strategic Value – Does the service add value at a statewide level that would offset any additional financial risk or subsidization that a longer transition period might create?
Budget Cycle – Does customer utilization of the service require that budget or IT project authority be secured?

3.2.4 Defining the Billable Unit

The process for defining the Billable Unit is the same as that described in Section 2.4.1. When temporary subsidization is proposed for the purpose of starting a new service, the definition of the Billable Unit is critical because it can have a profound effect on the marketability of the service, which in turn impacts the ability to meet the utilization levels assumed in the rate. As a result, it is more likely that the definition of the Billable Unit will be revised several times before the final rate is computed as the DTS makes decisions on how to bundle services and features and implement a billing structure that is the best fit for DTS and its customers.

3.2.5 Estimating the Cost of Service

In order to provide the information necessary to set a rate according to the Cost Recovery Objective and estimate the amount of subsidization and financial risk expected at a particular rate level, the cost analysis component of this methodology must produce an estimate of cost as a function of different levels of use. The result of the cost analysis is the Economies of Scale table and it is the responsibility of the DTS Financial Management Branch to complete this analysis in coordination with the service manager and technical staff. This table will contain the cost data necessary to complete all subsequent steps including setting the rate based on the Customer Adoption Assumption, quantifying the estimated subsidization, and assessing financial risk through scenario analysis.

The Economies of Scale table is created in Steps C and D of the methodology:

STEP C: Determine the monthly cost of each component using Steps 1-4 of the Service Rate Setting Methodology:

1. Define the Billing Metric (if necessary)
2. Identify all direct cost components
3. Identify the following attributes for each cost component:
   - Unit Price with Unit Description
   - Useful Life in Months
   - Fixed or Variable Cost
   - Quantity Driver
4. Calculate Monthly Cost for each Cost Component

Sample Result of Service Methodology*

Service: Sample Email
Billing Metric: per mailbox per month (STEP 1)

Direct Costs

Cost Component	Fixed/ Variable	Unit Price	Unit Description	Useful Life (mo)	Qty driver	Monthly Cost	Qty @ 40,000 mailboxes	Monthly Cost @ 40,000 mailboxes
STEP 2			STEP 3			STEP 4	STEP 6	STEP 7
Minimum Staffing	Fixed	$ 90,000	per position	12	3 for minimum coverage	$7,500.00	7	$22,500.00
Test Servers	Fixed	$ 12,000	per server	48	5 for test environment	$ 250.00	5	$ 1,250.00
Standard Server Software	Fixed	$ 3,600	per server	48	1 per test server	$ 75.00	5	$ 375.00
Exchange Software	Fixed	$ 2,400	per license	48	1 per test server	$ 50.00	5	$ 250.00
Mailbox Server	Variable	$ 12,000	per server	48	8 per cluster	$ 250.00	16	$ 4,000.00
Standard Server Software	Variable	$ 3,600	per server	48	per server	$ 75.00	16	$ 1,200.00
Exchange Software	Variable	$ 2,400	per license	48	per mailbox server	$ 50.00	16	$ 800.00
Scanmail Exchange Suite License	Variable	$ 3.60	per license	36	per mailbox	$ 0.10	40,000	$ 4,000.00
Scanmail Exchange Suite Maintenance	Variable	$ 1.20	per license/ per year	12	per scanmail license	$ 0.10	40,000	$ 4,000.00
Additional Messaging Staff Support	Variable	$ 90,000	per position	12	per 25K mailboxes	$7,500.00	1	$ 7,500.00
Server Administration Support	Variable	$ 90,000	per position	12	per 25 servers	$7,500.00	1	$ 7,500.00

As illustrated above using the example from Section 2.5.3 this methodology is no different from the Service methodology to this point. As indicated by the shaded portions in the example, the change occurs at Step 6. Instead of determining the quantity and cost of each component at a specific Volume of Billable Units, the Temporary Subsidization methodology requires that these steps be determined for a range of volumes at some reasonable interval. Step D of this methodology represents the balance of cost analysis process for the Service methodology but applied to multiple volume levels:

*STEP D: Execute Steps 6-11 of the Service Rate Setting Methodology for the range of potential utilization levels (at some reasonable interval) and create the **Economies of Scale** table with the results.*

6. Calculate the Quantity of each cost component needed (per the Quantity Driver attribute) at the estimated Volume of Billable Units.
7. Calculate Monthly Cost for each component at the estimated Volume of Billable Units.(Step 4 x Step 6)
8. Sum Monthly Cost of all cost components to determine Direct Cost of Service.
9. Estimate Indirect Costs consistent with historical allocations in the cost accounting system or a model based on the DTS Indirect Cost allocation rules.
10. Sum Direct and Indirect Costs for Service for the Estimated Total Cost of Service.
11. Divide Total Cost of Service by Estimated Volume of Billable Units to determine the Rate.

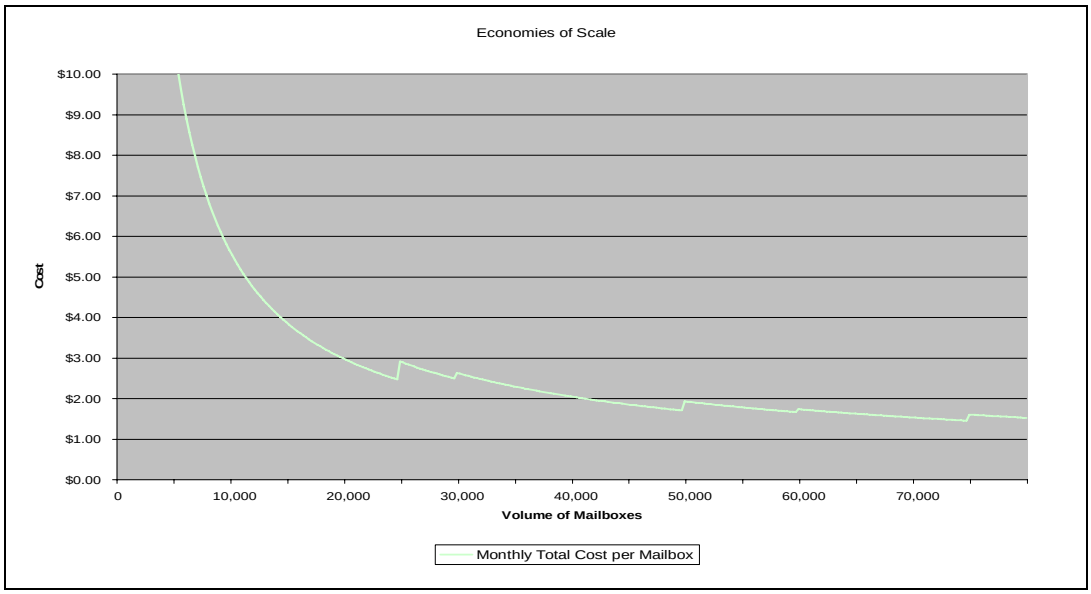
The results of these steps are organized into the Economies of Scale table that displays the monthly cost of the service over the range of volumes analyzed:

SAMPLE EMAIL SERVICE – Financial Analysis

Economies of Scale

Volume of Billable Units	Monthly Fixed Cost	Monthly Variable Cost	Monthly Direct Cost	Monthly Indirect Cost	Monthly Total Cost	Total Cost per Billable Unit
250	$24,375	$10,550	$34,925	$18,806	$53,731	$214.92
500	$24,375	$10,600	$34,975	$18,833	$53,808	$107.62
750	$24,375	$10,650	$35,025	$18,860	$53,885	$71.85
1,000	$24,375	$10,700	$35,075	$18,887	$53,962	$53.96
40,000	$24,375	$29,000	$53,375	$28,740	$82,115	$2.05
40,250	$24,375	$29,050	$53,425	$28,767	$82,192	$2.04
40,500	$24,375	$29,100	$53,475	$28,794	$82,269	$2.03

The first and last columns of the Economies of Scale table can be used to create a chart that illustrates how the monthly cost per billable unit changes as volume increases:



3.2.6 Estimating the Volume of Billable Units

In order to provide the information necessary to set a rate according to the Cost Recovery Objective and communicate the amount of subsidization and financial risk expected at a particular rate level, the volume analysis component of this methodology must produce a projection of the pattern of utilization that is expected over the period of transition. This is accomplished as Step E of the methodology.

*STEP E: Establish the **Customer Adoption Assumption** by estimating the expected volume for each month of the transition period using historical data, market research, known service requests and any other relevant information.*

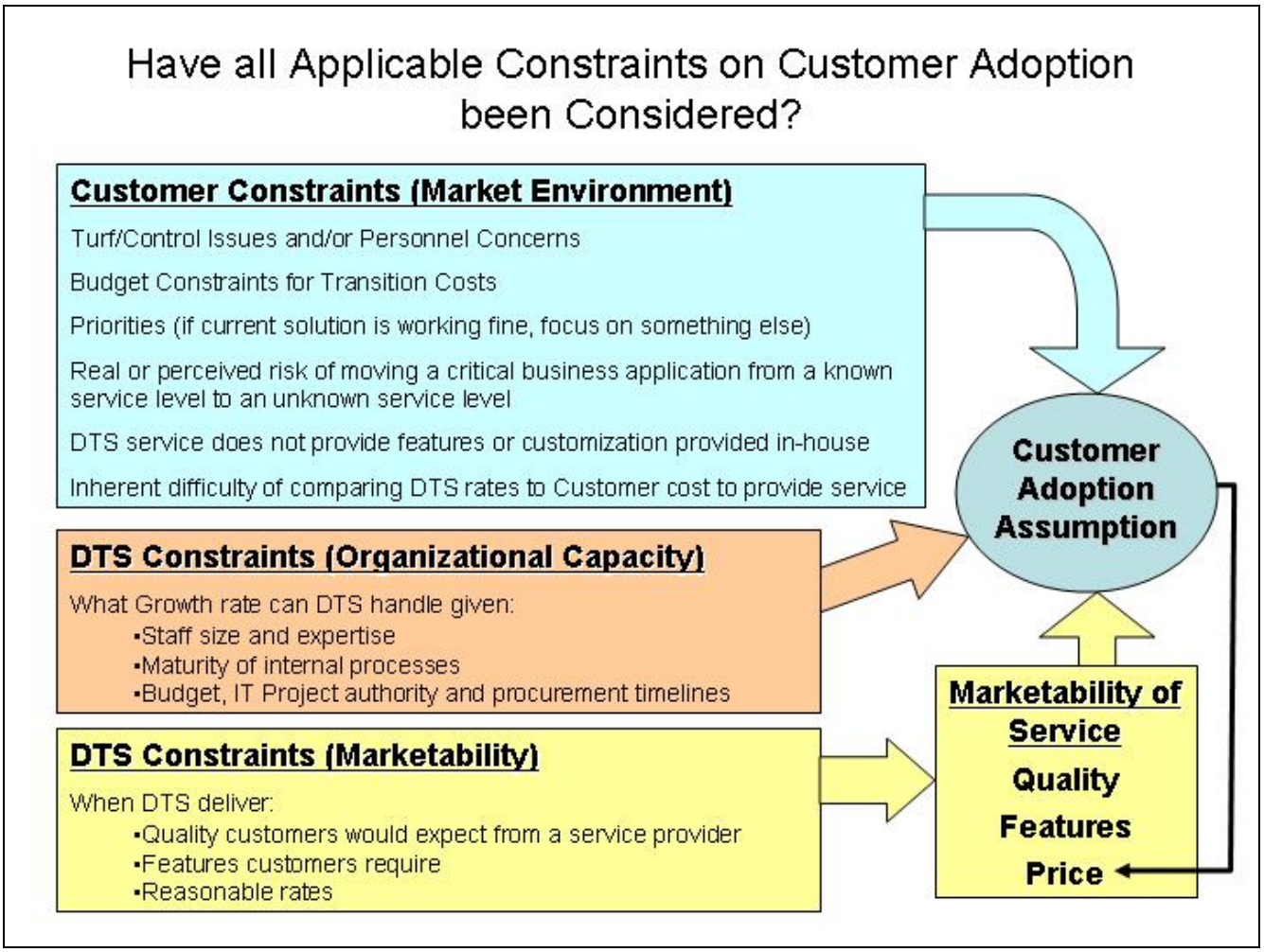
The execution of this step is the responsibility of the DTS Customer Delivery Division and the Service Manager to complete and provide to the Financial Management staff. The Customer Adoption Assumption is simply a table showing the number of months of the transition period and a Volume of Billable Units expected in each month. For the purposes of scenario analysis, there are typically low, middle and high assumptions, with the middle being the best estimate. The template shown below includes space for specific assumptions to be cited. For example, comments could explain that the assumption is a linear growth pattern from one point to another or it could indicate a specific customer that is assumed to come on to the service at that point in time.

SAMPLE EMAIL – Financial Analysis

Customer Adoption Assumption

Low			Middle			High		
Month	Volume	Adoption Assumption Detail	Month	Volume	Adoption Assumption Detail	Month	Volume	Adoption Assumption Detail
0	-		0	-		0	-	
1	250		1	250		1	250	
2	250		2	250		2	250	
3	1,000		3	1,250		3	1,250	
4	1,000		4	1,250		4	1,250	
5	1,750		5	1,250		5	5,000	
6	1,750		6	5,000		6	5,000	
7	2,500		7	5,000		7	5,000	
8	2,500		8	5,000		8	10,000	
9	3,250		9	5,000		9	10,000	
10	3,250		10	12,000		10	15,000	
11	4,000		11	12,000		11	15,000	
12	4,000		12	12,000		12	15,000	
13	4,750		13	12,000		13	20,000	
14	4,750		14	12,000		14	20,000	
15	5,500		15	15,000		15	20,000	
16	5,500		16	15,000		16	25,000	
17	6,250		17	15,000		17	25,000	
18	6,250		18	15,000		18	25,000	
19	7,000		19	20,000		19	30,000	
20	7,000		20	20,000		20	30,000	
21	7,750		21	20,000		21	30,000	
22	8,500		22	20,000		22	35,000	
23	9,250		23	20,000		23	35,000	
24	10,000		24	20,000		24	40,000	

Although this is a simple concept, the risk of the actual customer adoption pattern being materially different than the Customer Adoption Assumption is typically the single greatest risk to achieving the Policy Objective. For example, if the Customer Adoption Assumption is too high, the rate for the transition period will be set too low and may need to be significantly increased at the end of the transition period, which could create a problem for those customers that adopted the service under the lower rate. Thus, it is absolutely critical to the integrity of the methodology that the assumption be as accurate as possible. In order to produce the most accurate Customer Adoption Assumption as possible there are many factors that need to be considered. The figure below lists the primary constraints on customer adoption.



The effort outlined above is the most important task for mitigating the investment risk of temporary subsidization. The use of temporary subsidization is based on the premise that the rate poses a significant barrier to entry for customers who would otherwise use the service. If in fact, there are other significant constraints that are not factored into the Customer Adoption Assumption, then the DTS runs the risk of significantly under-recovering and possibly losing the investment in the service (depending on the nature of the obstacle). Further, it is very important to know how customers perceive the quality and features of the service as it relates to their business needs and their current solution. Simply put, temporary subsidization is a tool for addressing the price as a bottleneck for customer demand, but it will have no effect on demand if there are other constraints that represent bottlenecks of equal or greater influence.

3.2.7 Setting the Rate

Once the Economies of Scale table and the Customer Adoption Assumption are complete all the data is in place to set the rate according to the Cost Recovery Objective.

*STEP F: Create the **Cost Forecast**, by modeling the monthly and cumulative cost of the service during the transition period:*

- *For each month, indicate the expected volume per the **Customer Adoption Assumption**.*
- *For each month, find the corresponding cost per unit at the estimated volume level per the **Economies of Scale** table created in Step D.*

Constructing the Cost Forecast

Customer Adoption Assumption

Middle

Month	Volume	Adoption Assumption Detail
0	-	
1	250	
2	250	
3	250	
4	250	
5	1,250	
6	1,250	
7	1,250	
8	1,250	
9	1,250	
10	5,000	
11	5,000	
12	5,000	
13	5,000	
14	12,000	
15	12,000	
16	12,000	
17	12,000	
18	12,000	
19	12,000	
20	15,000	
21	15,000	
22	15,000	
23	15,000	
24	20,000	

Cost Forecast

for Middle Customer Adoption Scenario

Month	Volume	Monthly Direct Cost	Monthly Total Cost
0	-		
1	250	$ 34,925	$ 53,731
2	250	$ 34,925	$ 53,731
3	250	$ 34,925	$ 53,731
4	250	$ 34,925	$ 53,731
5	1,250	$ 35,125	$ 54,038
6	1,250	$ 35,125	$ 54,038
7	1,250	$ 35,125	$ 54,038
8	1,250	$ 35,125	$ 54,038
9	1,250	$ 35,125	$ 54,038
10	5,000	$ 35,875	$ 55,192
11	5,000	$ 35,875	$ 55,192
12	5,000	$ 35,875	$ 55,192
13	5,000	$ 35,875	$ 55,192
14	12,000	$ 37,275	$ 57,346
15	12,000	$ 37,275	$ 57,346
16	12,000	$ 37,275	$ 57,346
17	12,000	$ 37,275	$ 57,346
18	12,000	$ 37,275	$ 57,346
19	12,000	$ 37,275	$ 57,346
20	15,000	$ 37,875	$ 58,269
21	15,000	$ 37,875	$ 58,269
22	15,000	$ 37,875	$ 58,269
23	15,000	$ 37,875	$ 58,269
24	20,000	$ 38,875	$ 59,808
Totals	179,250	**$ 872,850**	**$ 1,342,846**

Economies of Scale

Volume	Monthly Direct Cost	Monthly Total Cost
250	$ 34,925	$ 53,731
500	$ 34,975	$ 53,808
750	$ 35,025	$ 53,885
1,000	$ 35,075	$ 53,962
1,250	$ 35,125	$ 54,038
1,500	$ 35,175	$ 54,115
4,500	$ 35,775	$ 55,038
4,750	$ 35,825	$ 55,115
5,000	$ 35,875	$ 55,192
5,250	$ 35,925	$ 55,269
5,500	$ 35,975	$ 55,346
11,500	$ 37,175	$ 57,192
11,750	$ 37,225	$ 57,269
12,000	$ 37,275	$ 57,346
12,250	$ 37,325	$ 57,423
12,500	$ 37,375	$ 57,500
14,500	$ 37,775	$ 58,115
14,750	$ 37,825	$ 58,192
15,000	$ 37,875	$ 58,269
15,250	$ 37,925	$ 58,346
15,500	$ 37,975	$ 58,423
19,500	$ 38,775	$ 59,654
19,750	$ 38,825	$ 59,731
20,000	$ 38,875	$ 59,808
20,250	$ 38,875	$ 59,808
20,500	$ 38,875	$ 59,808

*STEP G: Use the **Cost Recovery Objective** to define the Cost and Volume variables in the fundamental rate equation from the **Cost Forecast** created in Step F and solve for the rate.*

Cost Forecast

for Middle Customer Adoption Scenario

Month	Volume	Monthly Direct Cost	Monthly Total Cost
0	-		
1	250	$ 34,925	$ 53,731
2	250	$ 34,925	$ 53,731
3	250	$ 34,925	$ 53,731
4	250	$ 34,925	$ 53,731
5	1,250	$ 35,125	$ 54,038
6	1,250	$ 35,125	$ 54,038
7	1,250	$ 35,125	$ 54,038
8	1,250	$ 35,125	$ 54,038
9	1,250	$ 35,125	$ 54,038
10	5,000	$ 35,875	$ 55,192
11	5,000	$ 35,875	$ 55,192
12	5,000	$ 35,875	$ 55,192
13	5,000	$ 35,875	$ 55,192
14	12,000	$ 37,275	$ 57,346
15	12,000	$ 37,275	$ 57,346
16	12,000	$ 37,275	$ 57,346
17	12,000	$ 37,275	$ 57,346
18	12,000	$ 37,275	$ 57,346
19	12,000	$ 37,275	$ 57,346
20	15,000	$ 37,875	$ 58,269
21	15,000	$ 37,875	$ 58,269
22	15,000	$ 37,875	$ 58,269
23	15,000	$ 37,875	$ 58,269
24	20,000	$ 38,875	$ 59,808
Totals	179,250	**$ 872,850**	**$ 1,342,846**

Fundamental Rate Equation (Section 2.1):

$$\text{RATE per Billable Unit} = \frac{\text{Cost of Service}}{\text{Volume of Billable Units}}$$

Sample Calculations for Cost Recovery Objectives

Direct Cost – Monthly Break Even at 24 months

$$\frac{\text{Monthly Direct Cost at Month 24}}{\text{Volume of Billable Units at Month 24}} = \frac{\$\ 38,875}{20,000} = \$1.94$$

Total Cost – Monthly Break Even at 24 months

$$\frac{\text{Monthly Total Cost at Month 24}}{\text{Volume of Billable Units at Month 24}} = \frac{\$\ 59,808}{20,000} = \$2.99$$

Direct Cost – Cumulative Break Even at 24 months

$$\frac{\text{Cumulative Direct Cost over 24 months}}{\text{Volume of Billable Units over 24 months}} = \frac{\$\ 872,850}{179,250} = \$4.87$$

Total Cost – Cumulative Break Even at 24 months

$$\frac{\text{Cumulative Total Cost over 24 months}}{\text{Volume of Billable Units over 24 months}} = \frac{\$1,342,846}{179,250} = \$7.49$$

Assuming for the purpose of the running example, that the Cost Recovery Objective for the Sample Email service was "Total Cost – Monthly Break Even at 24 months", then the cost of service for the rate calculation would be defined as the Monthly Total Cost at Month 24 and the Volume of Billable Units would be the expected volume in month 24 for a Monthly Total Cost of $2.99 per Billable Unit.

If the result from the methodology appears reasonable and the financial risk of the temporary subsidization is considered acceptable, then the Cost per Billable Unit that results from this methodology can be used as the rate. However, if the methodology produces a rate that is higher than what is marketable or would create a level of subsidization and risk higher than what the DTS or its stakeholders are prepared to accept, then other rate levels may be considered. This can create a bit of an iterative process as the interrelationships of price, marketability, and risk are considered. This last part of analysis is STEP H of the methodology. If an appropriate balance of price, marketability, and risk cannot be found, the DTS may need to conclude that the service is not viable as an offering under the DTS business model.

The next section explains how the data created is used to estimate the amount of subsidization that the methodology creates for a particular service and how the DTS can assess the level of financial risk through the use of break-even points and scenario analysis. Ultimately, the rate can be set at any level and the tools created by this methodology can quantify the subsidization and financial risk.

3.2.8 Estimating Total Subsidization and Financial Risk

This section describes how the amount of subsidization proposed is calculated and how break-even watermarks and scenario analysis are used for assessing financial risk.

Estimating Total Subsidization

Estimating the amount of subsidization that is assumed at a given rate requires that a revenue column be added to the Cost Forecast. The revenue column contains the monthly revenue estimated to be collected in that month based on the assumed rate (the $2.99/mailbox/month determined in our example is rounded up to $3.00) and volume. The Total Subsidization is the difference between cumulative cost and cumulative revenue over the transition period.

Cost Forecast
for Middle Customer Adoption Scenario

Month	Volume	Monthly Direct Cost	Monthly Total Cost	Revenue $3.00/mailbox/
0	-			
1	250	$ 34,925	$ 53,731	$ 750
2	250	$ 34,925	$ 53,731	$ 750
3	250	$ 34,925	$ 53,731	$ 750
4	250	$ 34,925	$ 53,731	$ 750
5	1,250	$ 35,125	$ 54,038	$ 3,750
6	1,250	$ 35,125	$ 54,038	$ 3,750
7	1,250	$ 35,125	$ 54,038	$ 3,750
8	1,250	$ 35,125	$ 54,038	$ 3,750
9	1,250	$ 35,125	$ 54,038	$ 3,750
10	5,000	$ 35,875	$ 55,192	$ 15,000
11	5,000	$ 35,875	$ 55,192	$ 15,000
12	5,000	$ 35,875	$ 55,192	$ 15,000
13	5,000	$ 35,875	$ 55,192	$ 15,000
14	12,000	$ 37,275	$ 57,346	$ 36,000
15	12,000	$ 37,275	$ 57,346	$ 36,000
16	12,000	$ 37,275	$ 57,346	$ 36,000
17	12,000	$ 37,275	$ 57,346	$ 36,000
18	12,000	$ 37,275	$ 57,346	$ 36,000
19	12,000	$ 37,275	$ 57,346	$ 36,000
20	15,000	$ 37,875	$ 58,269	$ 45,000
21	15,000	$ 37,875	$ 58,269	$ 45,000
22	15,000	$ 37,875	$ 58,269	$ 45,000
23	15,000	$ 37,875	$ 58,269	$ 45,000
24	20,000	$ 38,875	$ 59,808	$ 60,000
Totals	179,250	**$ 872,850**	**$ 1,342,846**	**$ 537,750**

In this case, the Total Subsidization in terms of Total Cost is $805,096 ($1,342,846 - $537,750) and $345,100 ($872,850 - $537,750) in terms of Direct Cost.

Break-even Points

Throughout this methodology Direct Costs and Total Cost have been differentiated because the difference between what each represents can play an important role in determining the rate level and the amount of financial risk that is created at a particular risk level. As defined in Chapter 2, Direct Costs are those that are clearly attributable to a single service, Indirect Costs are those that benefit multiple services and are allocated to each based on some reasonable allocation metric and Total Cost is the sum of the two. Because many of the Indirect Cost components are fixed or grow very slowly in relation to the growth in a service, the Indirect Cost allocated to a new service is much more an indication of a service's fair share of those costs rather than an estimate of the additional costs that the service will create in those areas. In contrast, Direct Cost is very much an indication of the additional costs that the DTS will incur as a result of the service. Therefore, if we assume for the purposes of risk analysis, that Direct Cost is a reasonable (albeit slightly low) estimate of the actual cost of the service and Indirect Costs represents the service's fair share of overhead that otherwise would have to be recovered through existing customers, the following break-even points help frame the numbers in this analysis in terms that facilitate the business decision of where to set the rate and the financial risk involved.

Break Even Points

Break Even Points	Description	Implication
Direct Cost – Monthly	The point at which Monthly Revenue is equal to or greater than the Monthly Direct Cost.	The service is now able to recover the cost it creates on a monthly basis. Subsidization of Direct Costs is done.
Total Cost - Monthly	The point at which Monthly Revenue is equal to or greater than the Monthly Total Cost.	The service is now able to recover both the additional cost it creates and all indirect costs allocated to it on a monthly basis. Subsidization of Total Costs is done.
Direct Cost – Cumulative	The point at which Cumulative Revenue is equal to or greater than the Cumulative Direct Cost.	The service has recovered all the cost it has created since service launch. No net subsidization of Direct Costs. The service has paid for itself.
Total Cost - Cumulative	The point at which Monthly Revenue is equal to or greater than the Cumulative Total Cost.	The service has recovered all the cost it has created since service launch and all the indirect costs allocated to it. The service has paid for itself and contributed its fair share to the recovery of Indirect Costs. No net subsidization.

Given the Customer Adoption Assumption and a rate assumption, the status of cost recovery can be summarized in the following table. This table can be used to assess how the business is expected to perform given the current volume and rate assumptions.

The assumptions being evaluated.

Volume at which Cost per Unit is equal to the assumed rate.

Cost Recovery performance over transition period.

Break Even Analysis given Volume and Rate Assumptions

Customer Adoption Assumption: Middle
Rate Assumption: $ 3.00 /mailbox/month

Break Even Points	Volume	Period (months)	Cost Recovery Status at Break Even Point			
			Cumulative Direct Cost		Cumulative Total Cost	
			over/under	% 0f Cost	over/under	% 0f Cost
Direct Cost - Monthly	12,250	19	$ (384,725)	-56.4%	$ (752,212)	-71.6%
Total Cost - Monthly	20,000	24	$ (335,100)	-38.4%	$ (805,096)	-60.0%
Direct Cost - Cumulative		36	$ -	0.0%	$ (750,288)	-36.3%
Total Cost - Cumulative		Over 60	$ 764,100	20.4%	$ (546,058)	-14.6%
Total for Transition Period	179,250	24	$ (335,100)	-38.4%	$ (805,096)	-60.0%

Number of months to reach Break Even point

Cumulative Revenue - Cumulative Direct Cost
Direct Cost Recovery at break even point

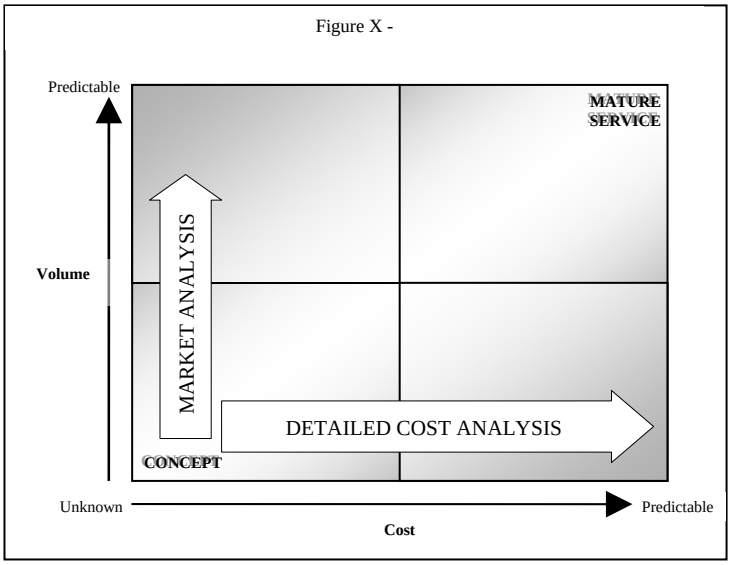
Cumulative Revenue - Cumulative Total Cost
Total Cost Recovery at break even point

The break even points used here are identical to the four Cost Recovery Objectives that are typically presented as options at the beginning of the process. As a result, when we evaluate a Customer Adoption and Rate assumptions that are derived from one of those Cost Recovery Objectives we will see the Total for Transition Period will be equal to that break even point (Total Cost- monthly, in the example above). When the break even point occurs beyond the scope of the Customer Adoption Assumption (in the case above, 60 months), then a message indicates this in the period column and the cost recovery numbers reflect that status at the last month for which there is data.

Scenario/Financial Risk Analysis

The Temporary Subsidization methodology is typically used for new services and in these cases there is an amount of risk associated with the lack of experience with costs and volume. To mitigate this risk the DTS performs comprehensive detailed analysis of costs as described in this chapter and does as much as possible in the way of market research to determine the marketability of the service to the DTS customers in order to estimate the volume of service that will be provided. In terms of the chart from Chapter 2, the strategy DTS employs is to get as far as possible down the Cost axis of this graph using industry standards, experience from piloting the technology and whatever information is available to enable a reasonably accurate projection of costs at any volume level. The challenge for the DTS is moving up the Volume axis. The uncertainty on the Volume side of the equation is the primary source of financial risk for the service. In order to assess the financial risk of underestimating volume, the DTS includes a "Low" Customer Adoption Assumption as part of the Temporary Subsidization Methodology. When the Low assumptions is plugged into the break even analysis above we can evaluate the Cost Recovery performance

Figure X -



under the assumption that we set the rate according to expected volume but the actual volume comes in at the "Low" level:

Break Even Analysis given Volume and Rate Assumptions						
Customer Adoption Assumption:		**Low**				
Rate Assumption:		**$ 3.00**	**/mailbox/month**			
Break Even Points	Volume	Period (months)	**Cost Recovery Status at Break Even Point**			
			Cumulative Direct Cost		Cumulative Total Cost	
			over/under	% 0f Cost	over/under	% 0f Cost
Direct Cost - Monthly	12,250	21	$ (564,975)	-47.4%	$ (1,207,212)	-65.8%
Total Cost - Monthly	20,000	35	$ (315,900)	-14.2%	$ (1,510,962)	-44.3%
Direct Cost - Cumulative		43	$ (315,900)	-14.2%	$ (1,510,962)	-44.3%
Total Cost - Cumulative		Over 60	$ (315,900)	-9.3%	$ (1,510,962)	-44.3%
Total for Transition Period	179,250	24	$ (534,600)	-61.2%	$ (996,923)	-74.2%
Analysis of Rate Realignment at end of Transition Period						
Volume at end of period						10,000
Rate required at end of transition period (Total Cost - Monthly)						$ 5.67
Rate Change Required						$ 2.67
Percent Change						89%
Annualized Customer Impact of Rate Change						$ 320,769

In the example above, the Low Customer Adoption Assumption results in our selected Cost Recovery Objective of breaking even to Monthly Total Cost not being achieved until month 60. Further, the Direct Cost – Cumulative break even point, which roughly indicates the point at which the service becomes a productive member of the service portfolio (from a financial perspective) by contributing to indirect costs that other services would have otherwise recovered, falls outside of the 60 month analysis window. To the extent that this level of cost recovery and the probability of it occurring creates a financial risk greater than DTS and/or its stakeholders are willing to accept, either the assumed rate would need to be increased or the service should not be offered. Increasing the rate can impact marketability and that impact needs to be considered when evaluating different rate levels. This is what triggers the iterative process of STEP H referred to in the previous section. The example below shows the evaluation of a higher rate (assuming the same Low Customer Adoption Assumption). The following represents a potential scenario analysis where the rate of $4.50 is being evaluated at the Low Customer Adoption Assumption:

Break Even Analysis given Volume and Rate Assumptions						
Customer Adoption Assumption:		**Low**				
Rate Assumption:		**$ 4.50**	**/mailbox/month**			
Break Even Points	Volume	Period (months)	**Cost Recovery Status at Break Even Point**			
			Cumulative Direct Cost		Cumulative Total Cost	
			over/under	% 0f Cost	over/under	% 0f Cost
Direct Cost - Monthly	8,000	21	$ (387,300)	-51.7%	$ (790,298)	-68.6%
Total Cost - Monthly	12,750	35	$ (212,275)	-16.7%	$ (894,788)	-45.9%
Direct Cost - Cumulative		43	$ -	0.0%	$ (858,673)	-35.6%
Total Cost - Cumulative		Over 60	$ 35,850	18.6%	$ (559,212)	-16.4%
Total for Transition Period	179,250	24	$ (372,600)	-42.7%	$ (834,923)	-62.2%
Analysis of Rate Realignment at end of Transition Period						
Volume at end of period						10,000
Rate required at end of transition period (Total Cost - Monthly)						$ 5.67
Rate Change Required						$ 1.17
Percent Change						26%
Annualized Customer Impact of Rate Change						$ 140,769

The bottom five lines of the break even analysis shown above indicates the estimated rate change that would be required pursuant to Guiding Principle Number 5 provision that the rate be aligned to cost at the end of the transition period. This information can be used to assess the financial and political risk associated with a given rate as well as to assist individual customers and the Department of Finance to assess the potential budget

impacts to customers that have adopted the service should actual utilization come in significantly lower than assumed.

There is no reasonable way to establish risk thresholds that will be universally applicable across all services. In some cases a service with high strategic value or significant value to customers that is not captured in the break-even analysis shown here, a much higher financial risk or level of subsidization may be acceptable to the stakeholders that approve the rate. In all cases, the analysis of each service that is subsidized through this methodology should include an explanation of why the level of financial risk identified is deemed acceptable to the State and to the DTS.

3.3 MONITORING AND CONTROL

Guiding Principle Number 5 states that the connection of rate to cost can be suspended for an actively managed period of transition. Consistent with the requirement that the period be actively managed the DTS will report a progress report for every TSB and the Services Committee meeting that occurs during the transition period. The report will be included on the agenda as at least an informational item. The report will include:

- The Cost Recovery Objective and Customer Adoption Assumption.
- A comparison of current utilization to that projected in the Customer Adoption Assumption.
- A comparison of current costs to that projected in the Economies of Scale table.
- A comparison of the actual subsidization to that anticipated in the Cost Forecast.
- An explanation or discussion of any significant variances.
- Assessment of the need for corrective action, either to the rate, the service or through additional involvement of the Board, Finance or other stakeholders.

This report should be used not only to report progress but also facilitate the discussion of corrective action early in the process. This may include identifying and removing unforeseen barriers to entry for customers, revisiting previous assumptions based on better information, or just maintaining the customer focus on the strategic effort of centralizing the management of shared services in the midst of ever changing state and customer priorities.

3.4 IMPACT ON RESTRICTED FUND SOURCES

Setting rates at a level other than the best estimate of cost within a particular fiscal year requires that the implications for charges to federal grants be considered. In the case of subsidizing a service temporarily, the federal government would not have any issue with the under recovery of the subsidized service because federally funded uses of the service will benefit from the subsidy. However, there may be concern about where the subsidization comes from and if federal funding is being used in ways other than that which is allowable under the provisions of Office of Management and Budget Circular A-87 (OMB A-87). This section will summarize the existing process used to ensure the appropriate use of federal funds and the effective financial consequences of the process when it is determined that a DTS activity is unallowable.

The annual Reconciliation of Retained Earnings that the DTS performs as part of its compliance with OMB A-87 is the process by which the DTS tracks costs and revenues according to the federal requirements and returns any excess retained earnings to the federal government. Recognizing that an Internal Service Fund is not likely to be administered exactly to the federal government's parameters, the Reconciliation provides the framework for identifying and reconciling the impact of activities in the fund that are not consistent with the Circular. These activities include unallowable expenditures, surcharges and non-billed services. After all the annual expenditures and revenues are treated appropriately, the result is an OMB A-87 balance of retained earnings within the DTS Revolving Fund. When this balance exceeds 60 days of the previous year's expenditures, the DTS must return the estimated federal share of the excess. The resulting balance, after the return of the federal share if appropriate, is used as the starting balance for the next year's reconciliation. Once the reconciliation is complete the DTS Revolving Fund balance will include up to 60 days worth of working capital that includes

federal participation and any balance above 60 days would consist of state funds only. Effectively the reconciliation results in those funds being used for any of the unallowable expenditures of the fund. Thus, this process maintains compliance with the intended and allowable uses of federal grants, acknowledging that the DTS and the State of California may have business needs that require that some activities related to the fund are not consistent with the federal guidelines. As long as this reconciliation is being performed correctly, federal funds will not be used inappropriately.

Although the Reconciliation provides a process to ensure federal grants are not used inappropriately, there are business consequences that result from using the state funds in the Revolving Fund to finance unallowable activities:

- High Rates - In order to maintain a sufficient balance to fund unallowable activities from state funds, service rates must over-collect sufficiently to allow for the return of the appropriate federal share and the funding of the activities themselves from the remaining balance. If this is not done, the fund balance would eventually decline until business is unsustainable.
- Federal Discounts – If there is an ongoing under-collection of one service and an over-collection of another, the Reconciliation results in the federal government getting not only the benefit of using an under-collected service but also the over-collected service at a discount because a portion of the over-collection in that service is returned.

As a result of these business consequences the DTS strives to keep rates in line with costs and unallowable activities to a minimum and for strategic business needs, such as the temporary subsidization of new services.

4. GOVERNANCE

Pursuant to the department's enabling legislation, the Department of Finance and the Technology Services Board have a role in the review and approval of DTS rate proposals. Specifically, Government Code Section 11540(b) states:

> The Director shall propose for Board consideration rates for department services based on a formal rate methodology approved by the Board. At least 60 days before submitting proposed rates to the Board, the director shall submit the proposed rates to the Department of Finance. Submittal of the rates to the Department of Finance shall be in a format and timeframe determined by the Department of Finance. The Department of Finance shall prepare a report to the Board evaluating the reasonableness of the proposed rates and any significant impact the Department's rates are likely to have upon the budgets of other departments.

This chapter identifies the content of DTS rate proposals and the process by which the proposals will be reviewed and approved pursuant to Government Code Section 11540(b).

4.1 CONTENT OF DTS RATE PROPOSALS

The DTS continuously monitors the financial performance of its operations and periodically (usually annually) performs rate maintenance by adjusting rates where necessary to align service revenues with their respective costs. The presentation of the proposed adjustments is referred to as a "rate package" and historically consists of adjustments for 10-15 percent of the DTS rates. In addition to this annual process, there is sometimes a need to either change a rate or create a new rate between annual rate packages.

4.1.1 General Rate Proposals

DTS rate packages will provide sufficient information for customers to understand how the rates are changing and plan according, for the Department of Finance to evaluate the reasonability of the proposed changes and their impact on customer budgets and for the Technology Service Board to understand the business and policy implications of approving the rate proposal.

Rate packages submitted by the DTS will include the following:

- Past Year, and estimated Current Year Revenue vs. Expense Summary by Cost Center
- Summary of rate package impact on DTS Revenue and Expenses in the Budget Year
- Listing of all proposed rate changes, including the following information for each:
    - Rate Name
    - Cost Center Name
    - Comp Code
    - Current Rate
    - Proposed Rate
    - % change
    - Effective date
    - Impact on DTS revenue
- Net Customer Impact based on CY utilization
- Rate Change Detail (one for each service)
    - Brief Summary of Service
    - Summary of proposed change
        - Current Rate
        - Proposed Rate
        - Percent Change
        - Billing Metric change description (if appropriate)

        - Effective Date
    - Summary of Analysis
        - Rationale for change (rate/cost alignment, fairness, technology change, etc.)
        - Business factors driving change (increased utilization, increased costs, unanticipated changes in volume or cost)
        - Rate Setting Methodology Used
        - Analysis Detail (highlight significant changes) – tie to Fundamental Rate Equation
    - Summary of Business Impacts
        - Impact of Billing Metric Change (if appropriate)
        - Financial Impact
            - Impact on DTS Revenue and Expenses
            - Customer Impacts based on stated utilization estimate

4.1.2 Proposals for Temporary Subsidization

Rate proposals for Temporary Subsidization will include the following:

- Brief Summary of Service
- Statement of the Policy Objective for proposed subsidization
- Statement of the Cost Recovery Objective including explanation for the length of transition period selected
- The Customer Adoption Assumption including low and high scenarios and an explanation of what research was conducted to support the assumption and why the assumed adoption pattern is reasonable.
- The Economies of Scale Table and Chart
- The Cost and Revenue Forecast based on the Customer Adoption Assumption.
- The resulting rate at each of the four standard Break-even Points and identification of the rate according to the selected Cost Recovery Objective
- Financial Risk Analysis including Break Even Analysis for the proposed rate and any other scenarios that are appropriate to evaluate.
- The proposed rate and an explanation of why the level of subsidization and associated financial risk are acceptable to the State and the DTS.

In cases when the rate proposal is for a new service, this material would be included as part of the New Service Proposal.

4.2 REVIEW AND APPROVAL PROCESS

Rate proposals will be reviewed by the Department of Finance, reviewed and approved by the TSB Services Committee, and reviewed and approved by the TSB with recommendations from both Finance and the chair of the Services Committee.

Rate Packages

Rate packages will be submitted to Finance no later than 30 days prior to the Services Committee meeting at which the package will be considered and no later than 60 days prior to the TSB meeting at which the package will be considered.

New Services

A rate for a new service will be reviewed and approved based on the process described in the New Services Development Methodology. However, the reporting requirement for rate calculation will be at least what is outlined in this methodology.

Minor Mid-year Adjustments

Occasionally, immediate business needs will require rate changes to be made between major rate packages. When these changes are minor or technical in nature it may not be reasonable to convene the TSB to review and approve them. However, because Government Code Section 11540 provides the TSB approval authority of DTS rates, any flexibility to address these types of changes would need to be delegated by TSB action to the Director of the DTS. In order to obtain the flexibility to address these types of issues, the DTS intends to pursue such delegation.

APPENDIX A
FACTORS AFFECTING COMPLEXITY AND METHODOLOGY FOR EACH TASK

Defining the Billable Unit
Nexus to cost driver – How closely aligned is the charging metric with the cost driver? Little or no nexus means that the volume estimate is not very important to defining the total cost of the service. A strong nexus means that volume is a defining factor in the cost estimate and thus, it must be estimated prior to completing the cost estimate. The DTS strives to define the billable unit with the strongest nexus to the cost driver as possible given the other factors. **Customer Behavior** – How services are charged can have a profound effect on customer behavior. For example, recovering network costs per IP address, per circuit bandwidth, per packet, or per headcount, would all have unique effects on customer behavior. **Simplicity –** At times the charging metric that may have the strongest nexus to actual cost may require a complicated billing structure resulting in an unreasonable investment of time and resources and/or a confusing bill for customers. **Fairness** – At times, the cost to provide service will vary by customer due to their respective needs and/or utilization patterns. When these differences are significant, the DTS may need to adjust the billing metrics to create a more equitable distribution of costs to its customers. For example, if a mainframe customer ran nothing but low-priority batch jobs, it would not be a customer who is driving capacity costs (which are driven by peak utilization) because it is really a user of excess capacity. Mainframe processing rates that recognized either the priority or timing (peak/non-peak) of the requested jobs may be seen as much more equitable to such a customer.
Volume Estimate
Availability and relevance of historical information – The easiest way to estimate volume is to have historical data that can be used to provide accurate forecasts. However, only our most mature services have this benefit and new services have none. This great variance requires that different forecasting techniques be used across the spectrum of services. **Magnitude of fixed costs –** If there is little or no fixed costs associated with a service, volume becomes less important because all the costs are variable and thus the cost per unit is much more predictable. **Stability of Utilization –** If utilization is stable, considerably less time is required to determine the volume component of the rate equation because the analyst can rely on historical information.
Cost Estimate
Availability and relevance of historical information - The easiest way to estimate the total cost of a service is to have historical data that can be used to provide accurate forecasts. However, only our most mature services have this benefit and new services have none. This great variance requires that different forecasting techniques be used across the spectrum of services. **Magnitude of fixed costs and/or shared resources –** When there is a significant amount of fixed costs associated with a service (base infrastructure, test environment, minimum staffing levels) it may be necessary to categorize cost components as fixed and variable in order to accurately project the total cost of providing the service at the estimated volume level. Similarly, when a service benefits from resources that are shared either within the service or with other services, additional analysis and assumptions may be necessary to accurately distribute and estimate the costs attributable to the service.

APPENDIX A
FACTORS AFFECTING COMPLEXITY AND METHODOLOGY FOR EACH TASK

Stability of Costs - If costs for a service have been stable (by component or in aggregate), considerably less time is required to determine the cost component of the rate equation because the analyst can rely on historical information.

Diversity of Cost Drivers – Often a service will have cost components whose quantities are driven by different factors. For example, staffing for open system storage is primarily driven by the number of servers attached to the storage, but the hardware and software costs are driven by how much capacity is purchased. In this situation there are now two volumes (servers and storage capacity) that need to be estimated in order to estimate costs. A high level of diversity in cost drivers within one service may require that many assumptions be made, or that a much more or less complex cost estimate model be used.

Number of rates that share the same cost center – Because there are over 200 different rates charged by the DTS, it is not reasonable to maintain a cost accounting system that captures costs specific to each. Instead, there are approximately 80 cost centers that capture costs by service area, many of which are recovered through several rates. In these cases, the cost center information would have to be manually segregated if it were to be used in defining the cost. Further, if this manual segregation effort would be too cumbersome or labor intensive, the analyst would opt to use a component-based approach to constructing a rate.

APPENDIX B
COST ALLOCATION BUSINESS RULES
JULY 1, 2006

DIRECT COSTS

Personnel: Salary plus 34.12% benefits (benefit ratio updated annually with the Budget Office). The State Controllers Office provides DTS with the total cost per employee. An allocation of personnel time split by cost center is made upon hire or transfer. Personnel may be divided by percentage between cost centers according to the range of their duties. On a monthly basis, cost centers managers receive a report that breaks out employees by cost center. Cost center managers are responsible for providing feedback/correction to billing analysts.

Overtime: Overtime hours and dollars are captured from a report that is generated by the State Controller's Office. Benefits on overtime are 7.65% and are calculated by the system. Overtime is paid at time and one half. Allocation follows the salary split to cost centers.

Travel: Follows the salary allocation of the employee performing the travel. For example if an employee salary is allocated 25% to CPU (CC 001) and 75% to Storage (CC 300), then all travel expenses associated with this employee, where the purpose of the travel is general or not clearly specified, will follow the same allocation percentages. If travel occurs specific to one service area, the entire travel cost will be charged to that cost center only.

Training: Follows the salary allocation of the employee receiving the training. For example, if an employee salary is allocated 25% to CPU (CC 001) and 75% to Storage (CC 300), then all training expenses associated with this employee, where the purpose of the training is not clearly specified, will follow the same allocation percentages. If training is specific to one service area, the entire training cost will be charged toward that cost center only.

Blackberries, Cell Phones and Pagers: The expenses associated with an employee permanently assigned a Blackberry, Cell Phone or Pager follows the salary allocation of the employee as described above.

Equipment and Software Depreciation: Amortized over an identified number of months when equipment or software cost is greater than or equal to $5,000. Amortized expense is allocated to cost center based on which cost center receives benefit from the asset. Cost may be divided by percentage between multiple cost centers. The depreciable number of months corresponds to the estimated useful life of the cost component (hardware, software, etc.).

Hardware and Software	Number of Months
Mainframe Devices	48
Servers	48
DASD	36
Tape Equipment	36
Routers	48
Software	36

Equipment (less than $5,000): Expensed as incurred when equipment cost is less than $5,000. Allocated to cost center based on which cost center receives the benefit. Cost may be divided by percentage between multiple benefiting cost centers. Includes EDP and office equipment.

Software (less than $5,000): Expensed as incurred when software cost is less than $5,000. Allocated to cost center based on which cost center receives the benefit. Cost may be divided by percentage between multiple benefiting cost centers.

Maintenance Agreements, EDP and software: Allocated to cost center based on which cost center receives the benefit. Cost may be divided by percentage between multiple benefiting cost centers. One-time maintenance agreements are amortized over the life of the agreement.

Equipment and Software Leases: Allocated to cost center based on which cost center receives the benefit. Cost may be divided by percentage between multiple benefiting cost centers. One-time lease agreements are amortized over the life of the agreement.

INDIRECT COSTS

Building Lease: Expenses are charged to CC 700 – Facility, then allocated to each cost center based on the floor space of each cost center as a percentage of total building floor space. Square footage estimates are based on raised floor space used plus staff office space.

Warehouse Lease: Allocated equally between four main cost centers at 25% each: CC 038 – Print, CC 270 – Communications, CC 850 – Courier, CC 888 – Administration. The warehouse is used to store old equipment, paper, office administration materials and network equipment.

Janitorial Services: Expenses are charged to CC 700 – Facility, then allocated using the same methodology as floor space.

Utilities - DTS Data Center: Expenses are charged to CC 700 – Facility, then allocated using the same methodology as floor space.

ABM Engineering Services: Expenses are charged to CC 700 – Facility, then allocated using the same methodology as floor space.

Utilities - Warehouse: Expenses are allocated using the same methodology as the warehouse lease.

Office Phones: Directly charged to CC 888 - Administration and allocated to all cost centers as part of Admin overhead allocation.

Office Supplies: When identifiable, costs are allocated to the service area that requested the supplies. In a large majority of cases, office supplies are ordered in bulk so they are allocated to all cost centers based on the number of PY in each cost center as a percentage of the total PYs for DTS. Follows the logic that all DTS PYs consume office supplies equally.

EDP Supplies: Cost includes paper, tapes, printer cartridges, and ribbons. Allocated to the cost center that receives the benefit, if easily identifiable, otherwise expenses are allocated to all cost centers based on the number of PY in each cost center as a percentage of the total PYs for DTS. Follows the logic that all DTS PYs consume office supplies equally.

CSUS Students: College students used in various DTS operations at a low cost. Allocated to cost centers upon hire and may be divided by percentage between cost centers according to the range of their duties.

Pro-Rata: This figure is determined by the State and represents DTS's fair share of State central service costs. Allocated to Admin Overhead (CC 888) - which is subsequently allocated to all service cost centers.

Consulting Services: Includes external consulting by private firms and internal consulting from other State agencies. Allocated to the cost center that receives the benefit.

Contract Services: Includes the contract cost to send tapes offsite for backups, and other costs such as Gartner and Meta group subscriptions. Allocated to the cost center that receives the benefit, for example Tape Library Cost Center for tape backups.

DTS ALLOCATES CERTAIN INDIRECT COST CENTER COSTS TO SERVICE COST CENTERS

Cost centers are treated as overhead when the service does not directly bring in revenue and there is not a clear association with a comp code(s). If these conditions are true, and the cost center benefits the services provided by all other cost centers, then it is treated as overhead and costs are allocated monthly.

Change Management - Cost Center 160: Change Management functions. Allocated to service cost centers based upon actual Remedy change management tickets from the prior year. The actual change management ticket information is calculated as a percent to total, and the percentage is applied to all change management costs.

Data Center Operations Support (Service Desk) - Cost Center 161: Help desk functions. Allocated to service cost centers based upon actual Remedy Help Desk tickets from the prior year. The actual help desk ticket information is calculated as a percent to total and the percentage is applied to all Help Desk costs.

System Security - Cost Center 184: Costs required in support of system security. Allocation is based on the percent to total (expenses) of cost centers requiring security services.

Allocation Ratio	Cost Center	Service
4.48%	CC 216	CICS
3.58%	CC 141	ADABAS
0.97%	CC 010	TSO
36.26%	CC 001	CPU
3.16%	CC 002	VM
3.86%	CC 205	DB2
2.08%	CC 145	IDMS
6.54%	CC 300	Data Storage
20.29%	CC 270	Network
3.68%	CC 080	Web Services
5.87%	CC 200	Wintel
3.42%	CC 208	AIX
5.81%	CC 212	UNIX Solaris

APPENDIX B
COST ALLOCATION BUSINESS RULES
JULY 1, 2006

Administration/Indirect Expense - Cost Center 888: Administrative costs required to support the department. Examples include: Executive staff, Administration Division, Customer Relations, Policy & Planning Division, Business Development, etc.). All expenses are allocated to all cost centers as a percentage to total expenses.

Building Security - Cost Center 700 (Facility): Expenses are charged to CC 700 then allocated to each cost center based on the floor space of each cost center as a percentage of total building floor space. Square footage estimates are based on raised floor space used plus staff office space.

O/R Cold Site/Business Resumption - Cost Center 187: Expenses are combined with CC 888, then allocated to all cost centers as a percentage to total expenses.

Internal PC Support - Cost Center 159: Share of costs for PC/LAN services. Allocated to all cost centers based on the number of PY in each cost center as a percentage of the total PYs for DTS. Follows the logic that all DTS PYs have PCs and require equipment and support equally.

Network Infrastructure - Cost Center 250: This cost center includes the cost of the network backbone. The network backbone provides a bridge between the CPU (or Servers) and the network. The rationale is without the network, CPU's would not work and without CPU's you do not need the network. The allocation is based on management estimate of the percentage of benefit received by the above cost centers from Cost Center 250. Allocated to platform cost centers:

Allocation Ratio	Cost Center	Service
10%	CC 001	Batch CPU
5%	CC 184	System IT Security
1%	CC 004	SWIFT
4%	CC 002	VM Timeshare
10%	CC 212	Unix Solaris
5%	CC 200	Wintel
5%	CC 080	Shared Internet Hosting
10%	CC 208	AIX
50%	CC 270	Communications

This is subject to changed based upon the pending new network business model and rate methodology.

Consolidation Expenses - Cost Center 889: Costs associated with the consolidation such as the CMO, consulting contracts, etc. Expenses are combined with CC 888, then allocated to all cost centers as a percentage to total expenses.

APPENDIX C
SUMMARY OF CHANGES

The following changes have been made to this document subsequent to the December 20, 2006, meeting of the Services Committee of the Technology Services Board:

ADDITIONS

Location: Page 38, Section 4.2

Title: Review and Approval Process, Minor Mid-year Adjustments

Text: Occasionally, immediate business needs will require rate changes to be made between major rate packages. When these changes are minor or technical in nature it may not be reasonable to convene the TSB to review and approve them. However, because Government Code Section 11540 provides the TSB approval authority of DTS rates, any flexibility to address these types of changes would need to be delegated by TSB action to the Director of the DTS. In order to obtain the flexibility to address these types of issues, the DTS intends to pursue such delegation.

DELETIONS

Location: Page 38, Section 4.2

Title: Review and Approval Process, Minor Mid-year Adjustments

Text: (rate changes)